AHURI Australian Housing and Urban Research Institute

PEER REVIEWED

Australian demographic trends and implications for housing assistance programs

FOR THE

Australian Housing and Urban Research Institute

PUBLICATION DATE

July 2017

DOI

10.18408/ahuri-5303901

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Title	Australian demographic trends and implications for housing assistance programs	
ISBN	978-1-925334-51-7	
Format	PDF	
Key words	Ageing, assistance, CRA, demand, demographic, housing assistance, demand, economy, public housing, tax	
Editor	Anne Badenhorst	AHURI National Office
Publisher	Australian Housing and Urban Research Institute Limited Melbourne, Australia	
DOI	10.18408/ahuri-5303901	
Series	AHURI Final Report; no. 286	
ISSN	1834-7223	
Preferred citation	Wood, G., Cigdem-Bayram, M., and Ong, Rachel. (2017) Australian demographic trends and implications for housing assistance programs, AHURI Final Report 286, Australian Housing and Urban Research Institute, Melbourne.	

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ACKNOWLEDGEMENTS

This material was produced with funding from the Australian Government and state and territory governments. AHURI Limited gratefully acknowledges the financial and other support it has received from these governments, without which this work would not have been possible.

AHURI Limited also gratefully acknowledges the contributions, both financial and in-kind, of its university research partners who have helped make the completion of this material possible.

The authors are grateful to Christopher Phelps for his timely and efficient research assistance. This report uses unit record data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. The HILDA project was initiated and is funded by the Australian Government Department of Social Services (DSS) and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute). The findings and views reported in this report, however, are those of the author and should not be attributed to either DSS or the Melbourne Institute.

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ACRONYMS

ABS	Australian Bureau of Statistics
AHURI	Australian Housing and Urban Research Institute Limited
CGT	Capital gains tax
CPI	Consumer price index
CRA	Commonwealth Rent Assistance
GDP	Gross domestic product
HILDA	Household, Income and Labour Dynamics in Australia
ISP	Income support payment
LVR	Loan-to-value ratio
NSW	New South Wales
NOM	Net overseas migration
SA	South Australia
WA	Western Australia

EXECUTIVE SUMMARY

- The combined impact of demographic change, and shifts in the Australian population's tenure profile, will be large. We forecast a 61 per cent increase in the number of households eligible to receive Commonwealth Rent Assistance (CRA) from 2011 to 2031. CRA payments are forecast to rise from $2.8 billion in 2011 to $4.5 billion in 2031—a 62 per cent addition to real budget expenditures. About half of the predicted increase is due to demographic changes, and the other half to an increase in private rental housing's tenure share.
- The rise in the budget cost of providing rent rebates to public housing tenants is more modest: an increase in budget cost from $1.1 billion in 2011 to $1.5 billion in 2031 is forecast.
- We estimate that in 2011, 730,000 home owners received higher income support payments (ISPs) than would have been the case in the absence of home owner asset test concessions. The budget cost of meeting these higher payments is predicted to rise 38 per cent above 2011 levels to $8 billion in 2031.
- Housing tax subsidies have a much larger budget cost than either housing assistance or the asset test concession. However, the predicted steep falls in rates of home ownership over the time horizon mean that projected increases in the aggregate real value of tax subsidies are *relatively* modest: we forecast a 23 per cent increase, from $15.3 billion in 2011 to $18.8 billion in 2031.
- In aggregate, the 2011 budget cost of housing subsidies (including the asset test concession) cost government $25 billion. By 2031 that figure is likely to have risen to around $33 billion.
- An alternative form of housing assistance is a secure leasing scheme, designed to provide more stable housing for especially vulnerable households that are eligible for public housing but currently reside in private rental, while curbing increases in the budget cost of housing subsidies.
- Simulations show that, in the absence of a secure leasing scheme, CRA payments to secure-lease-eligible tenants would amount to an estimated $8.6 billion over a five-year period (2010–14). On the other hand, accommodating these tenants in public housing would have cost the government $13.1 billion over the five years.
- Under the proposed secure leasing scheme, governments would be required to pay private landlords an incentivising premium of $14,891 or, on an annual basis, $3,498 in each year of the five-year lease. The annual equivalent budget cost is $2.38 billion with the total real budget cost summing to just over $10 billion over the five years.
- Secure lease tenants would continue to be eligible for CRA payments which would sum, over five years, to $7.4 billion, instead of $8.6 billion under status quo conditions. This $1.2 billion budget saving can be deducted from the estimated $10.1 billion budget cost of implementing the secure lease program.

Key findings

Budget costs: housing subsidies

A key task of this research has been to estimate the future budget cost of housing subsidies. The combined impact of expected demographic change, and shifts in the tenure profile of the Australian population, will be large. We forecast a 61 per cent increase, over 20 years, in the number of households eligible to receive CRA: from 952,000 in 2011 to 1,500,000 in 2031. At constant 2011 prices, CRA payments are forecast to rise from $2.8 billion in 2011 to $4.5 billion in 2031—a 62 per cent addition to real budget expenditures that represents an average 3.1 per cent per annum increase. This large increase is predicted despite a conservative assumption that real rents remain unchanged over the time horizon (2011–31). About half of the increase is due to demographic changes, and the other half to an increase in private rental housing's tenure share, as public housing's *share* continues to contract and home ownership stagnates. The budget cost of providing rent rebates to public housing tenants increases more modestly, because the number of households residing in public housing is expected to remain constant; an increase in budget costs from $1.1 billion in 2011 to $1.5 billion in 2031 is forecast.

Home owners benefit from an 'asset test concession' arises, because the value of an owner-occupier's home is not included alongside other assets assessable under the asset test. This preferential treatment of home owners is partly offset by a lower owner-occupier asset threshold (below which income support program entitlements are unaffected) as compared to that applied to rental tenants. Nevertheless, we estimate that in 2011, 730,000 home owners received higher ISPs than would have been the case if they were treated in the same way as tenants. The budget cost of this is calculated to be $5.8 billion for 2011—more than double the total actual cost of CRA payments in the same year. This budget cost (at constant 2011 prices) is predicted to increase to $8 billion in 2031 (a 38% increase on 2011 levels). This increase is based on the conservative assumption that real house prices remain constant over the 30-year time frame.

Housing tax subsidies have a larger budget cost than either housing assistance or the asset test concession. However, the predicted steep falls in rates of home ownership in middle age groups means that projected increases in the aggregate real value of tax subsidies are *relatively* modest: we forecast an increase from $15.3 billion in 2011 to $16.2 billion in 2021 and then $18.8 billion in 2031 (a 23% increase on 2011). Growth in the real value of tax subsidies is restrained by falling rates of home ownership in middle age groups, the historically high 2011 loan-to-value ratios (LVRs) (that are assumed to continue) and the relatively low 2011 interest rates, which are also assumed to remain stable.

In aggregate, the 2011 actual budget cost of housing subsidies (including the asset test concession) drained $25 billion from government 'coffers'. In 2011, Australian gross domestic product (GDP) was $1,401 billion. Thus, housing subsidies accounted for 1.8 per cent of Australia's GDP in 2011. Housing subsidies are expected to rise to $32.8 billion in 2031, a 31.2 per cent real increase.

Despite conservative assumptions, housing subsidies are expected to show large real increases in future years. One of the most important drivers is growth in CRA payments due to growing numbers of households in private rental housing, especially older households that have either failed to get into home ownership, or have fallen out of home ownership. This is a scenario that Australian governments will be concerned about given currently high budget deficits and the limited amount of secure rental housing available to older households. There are a number of possible policy responses to the challenges posed by these trends. In the second half of this report we investigate one option: the introduction of a secure lease program, which is designed to incentivise landlords into offering long-term five-year leases.

Secure leases would offer a greater degree of housing security than is commonplace in private rental housing, but at a lower budget cost than expansion in public housing. Such a scheme would, in effect, harness private rental investments for social housing purposes; however, this is only achievable by offering private landlords a rent premium to incentivise their commitment to offer longer term leases to eligible families. Our scheme is modelled on a similar scheme introduced by the New York City Housing Authority in the 1990s under an *Emergency Rental Housing Programme* that offered private landlords US$2,500 (per family member) to house families who would otherwise be residing in homeless shelters (Cragg and O'Flaherty 1999).

However, instead of targeting the homeless, our scheme is directed to those persons who are eligible for public housing but currently resident in private rental accommodation. Candidates for a secure lease would be drawn from the population of private rental households that are in fact eligible for public housing under income and asset tests. The household must also have at least one of the following three characteristics:

1. contains one or more person(s) aged over 64 years of age
2. contains one or more person(s) with a long-term health condition or disability
3. contains one or more school-aged dependent children (children aged 15 years or under).

Landlords participating in the scheme are expected to raise rents by no more than the increase in the consumer price index (all goods and services) over the five-year lease term. Secure lease tenants will continue to receive CRA, provided they remain eligible. The central idea is that secure leases offer more stable housing, while CRA and 'light touch' rent regulation (rent capping) concurrently help support affordability goals. From the perspective of government budgetary pressures, it is hoped that savings will be made by avoiding the high capital costs associated with the construction of new public/social housing.

Need for secure lease

To derive population estimates of the need for secure leases, we make use of the AHURI-3M microsimulation model and apply cross-section population weights from the 2010 Household, Income and Labour Dynamics in Australia (HILDA) Survey. We take each state housing authority's assessable income thresholds as at 2016 and to align with the 2010 wave of the HILDA Survey we deflate them to 2010 price levels.

It is estimated that a little over 650,000 Australian households (1,035,863 persons) form the potential client base for secure leasing arrangements. This is equivalent to one in three Australian households currently living in private rental housing. Within the client base, there are three main subgroups. Low-income households with dependent children form the biggest client subgroup (390,000), and almost all of these households are composed of adults under 65 years of age. The second largest client group consists of households containing one or more adults with a disability; but many (27%) of these households also contain persons aged over 65 years (the third main subgroup). Indeed, there are 178,000 households that belong to two or more of the three client subgroups.

The key demographic for this kind of affordable housing option has a youthful age profile relative to those households currently resident in public housing. In terms of life cycle stages, the 25–34 year age group, typically in the early stages of household formation, is the largest source of clients. This age group accounts for nearly one in three potential secure lease clients, with the 35–44 age group the next largest (22% of all clients). Furthermore, households with dependent children account for nearly two-thirds of the clientele. Relative to public housing tenants, the secure lease client base has a marginally higher representation of households with equivalised incomes below the 40th percentile. Younger families on low incomes are especially prominent.

Budget costs: secure leases

To compare the budget cost of our proposed secure lease program with the cost of continuing status quo housing subsidies, we began by estimating the housing assistance cost of continuing to accommodate the secure-lease-eligible tenants in private rental housing. Using AHURI-3M, we calculated the sum of CRA payments made to households that we identified as eligible for secure leases—that is, the current budget outlay of the Commonwealth Government required to meet its housing assistance obligations to these households under the CRA program. Our estimates cover a five-year time horizon (2010–14) and we assume that those households eligible to receive CRA in 2010 continue to receive CRA throughout that time. A budget cost of $1.72 billion is estimated for 2010, increasing by 2.9 per cent to $1.77 billion (at 2010 prices) in 2014. Over the time period, estimated budget costs sum to $8.6 billion.

The second stage of this costing exercise estimated the incentivising premium that we consider necessary in order to entice a sufficient number of private landlords to offer secure lease agreements, and abide by an agreement to limit increases in rent to annual movements in the consumer price index (CPI). One way to think about how governments might incentivise private landlords is to recognise that long-term leases require landlords to sacrifice liquidity. By offering a one-year lease term, the landlord has the option of being able to exploit alternative investment vehicles, offering superior returns, at the end of the first one-year lease term. When the investor commits to a five-year lease, s/he effectively sacrifices this option and thus would need to be compensated. We have estimated the liquidity premium (net of transaction costs) necessary to compensate landlords for foregoing alternative investments over the period 2010–14. The average (median) one-off incentivising premium would be $14,891 ($10,694) or, on an annual basis, $3,498 in each year of the five-year lease. If the premium were paid on this yearly basis, then the annual equivalent budget cost is $2.38 billion. The total real budget cost of incentivising landlords sums to just over $10 billion over the five years.

Secure lease tenants would continue to be eligible for CRA payments. However, because secure lease rents are capped to increase in line with consumer price inflation, budget costs for this item would be slightly lower than under actual market rents that increased in real terms over the time frame (2010–14). The estimated CRA bill would have totalled $7.4 billion over the five years to 2014 under secure leases, compared with $8.6 billion under status quo conditions. This $1.2 billion budget saving can be deducted from the estimated $10.1 billion budget cost of implementing the secure lease program.

In the absence of a secure lease program, an alternative scenario would be the construction of additional housing units to accommodate the secure-lease-eligible tenants in public housing. Evaluation of the budget cost of such a solution, on a comparable five-year basis, was conducted by estimating the difference between the rebated rent that eligible households are charged in public housing and the market rent if their housing were leased in the unregulated private rental market. On a population-weighted basis, the mean (median) value of the public housing subsidy per year is estimated to be $4,664 ($4,174). This average subsidy remains constant in real terms over the five-year forward estimates (given our *ceteris paribus* assumptions). The average subsidy is equivalent to an annual budgetary cost of around $3 billion, or $13.1 billion over the five years (when discounted at a rate of 8% per year). This total is $3 billion more than the estimated $10.1 billion budget cost of instituting the secure lease program.

The study

This report presents the findings from two programs of research. In the first program (Part 1), we explore the implications of demographic change for government outlays on housing assistance, and the government tax revenues foregone as a result of concessions extended

to home owners. Population ageing, growth in the numbers of single people, and anticipated falls in the rate of home ownership are key motivations for this first program of research, because these changes are expected to raise government outlays on housing assistance and increase the amount of tax revenue foregone as a result of tax and asset test concessions to home owners. In view of these expectations, federal and state governments are showing a keen interest in innovative housing assistance programs that offer more cost-effective support to those least able to 'pay their own way' in housing markets.

The second program of research (Part 2) therefore investigates a differentiated form of housing assistance that supports those people who are both vulnerable to housing affordability stress and in need of secure housing. It offers a costing of what we term 'secure leases', which is then compared to the estimated cost of alternatively delivering public housing to the expected clients of such a program.

In our first program of research we address two key research questions.

1. What is the real value of housing subsidies received by Australian home owners and renters in 2011, 2021 and 2031, and how is the budgetary cost of financing these subsidies expected to change over this time frame?
2. What challenges do these trends pose for a sustainable Australian housing policy in the twenty-first century? In particular, what are the implications if home ownership rates were to decline as forecast by Yates and Bradbury (2010)?

The second program of research addresses three key research questions.

1. How many households require subsidy in the form of our proposed secure leases? What is their breakdown by age cohort, household type, income group and geographical location?
2. What subsidy is required in order to incentivise a sufficient number of landlords to offer eligible low-income households with long-term (five-year) security of tenure?
3. How might this alternative housing assistance arrangement impact on the Federal Budget, as compared to current subsidy programs? And would there be savings to government budgets if they provided the 'incentivising' payment to landlords instead of accommodating eligible households in public housing?

To conduct the first program of research, we used the 2011 HILDA Survey as the base from which future demographic profiles were generated for the study time frame (2011–31). The year 2011 is used as the base year for measurement of Australia's housing subsidies and tax expenditures because this is the latest year of the updated AHURI-3M (the microsimulation model used to simulate the operation of Australia's tax and income support systems). The most relevant Australian Bureau of Statistics (ABS) population projections are sourced from the *Household and Family Projections, 2011 to 2036* issued in March 2015 (ABS 2015). We use the population growth rates from this ABS source to 'age' the HILDA data by adjusting the 2011 HILDA cross-section population weights corresponding to each responding person that is aged 15 years or older and financially independent. We also apply the long-run trend estimates in home ownership over the time frame 2011–31 that are presented in Yates, Kendig et al. (2008).

To derive population estimates of the need for secure leases, we make use of AHURI-3M and apply cross-section population weights from the 2010 HILDA Survey. We take each state housing authority's assessable income thresholds as at 2016 and deflate them to 2010 price levels, to align with the wave of the HILDA Survey that is used for base year calculations.

The investigation of the secure lease option is not meant to suggest that that this is a favoured approach relative to others. The choice of secure leasing for in-depth study reflects discussion in policy circles on how best to respond to resource constraints.

1 INTRODUCTION

1.1 Overview

This report presents the findings from two programs of research. In the first (Part 1), we explore the implications of demographic change for government outlays on housing assistance, and the government tax revenues foregone as a result of concessions extended to home owners. Population ageing, growth in the numbers of single people and anticipated falls in the rate of home ownership are key motivations for this first program of research, because these changes are expected to raise government outlays on housing assistance and increase the amount of tax revenue foregone as a result of tax and asset test concessions to home owners.

In view of these expectations, federal and state governments are showing a keen interest in innovative housing assistance programs that offer more cost-effective support to those least able to 'pay their own way' in housing markets. Numerous options have been put forward, and in the second program of research (Part 2) we investigate one of those options: a differentiated form of housing assistance (secure leases) that supports those people who are both vulnerable to housing affordability stress and in need of secure housing. It offers a costing of secure leases, which is then compared to the estimated cost of alternatively delivering public housing to the expected clients of such a program.

We begin by describing the policy relevance of each of these two programs of research.

1.2 Policy context

1.2.1 Part 1: Impacts of demographic change on housing subsidies in Australia

Housing consumers have traditionally received indirect and direct subsidies from governments to help alleviate housing cost burdens. The majority of Australia's housing subsidies are provided to encourage home ownership. Direct assistance to purchasers is provided in the form of the First Home Owner Grant (FHOG). Indirect assistance is provided through: non-taxation of imputed rent; Goods and Services Tax (GST) exemptions; stamp duty concessions; exemption of the family home from capital gains tax (CGT) and land tax; as well as preferential income support payment (ISP) asset tests, most importantly those applicable to the age pension.[1] Eligible renters benefit from Commonwealth Rent Assistance (CRA) or public housing rebated rents, and all rents are GST-exempt. However, the amount of housing subsidy received by home owners far outweighs the amount received by renters. Wood, Stewart et al. (2010) estimated the average annual housing subsidy received by private renters in 2006 as $901 (1.1% of disposable income), while home owners received an average of $2,201 (2.5% of disposable income).

There has been on-going concern about the inequitable distribution of housing subsidies and its adverse impacts on resource allocation in land and housing markets. Previous research by Wood, Stewart et al. (2010) and Yates (2009) has documented an unequal distribution of housing subsidies that targets assistance to older, higher income home owners, yet offers a disproportionately small amount of assistance to younger, lower income households in both home ownership and rental housing.[2] Wood, Stewart et al.(2010) estimated the average annual housing subsidy received by older Australians aged over 65 in 2006 at $3,439 (10.5% of gross income); but the highly indebted under-35s had an average 'subsidy' that was actually

[1] Property investors also receive indirect subsidies via a CGT discount and negative gearing provisions—these measures are outside the scope of the present project.

[2] An early study documenting these patterns is Yates and Flood (1987).

negative at -$2,328 (-2.8% of income).[3] These figures vividly illustrate why fears about future federal and state government funding requirements are justified. As Australia's population ages, the number of recipients of relatively large housing subsidies will grow and the budgetary cost of sustaining present subsidy arrangements will blow out.

There are also wider concerns. Ong, Wood et al. (2015) and Wood, Smith et al. (2013) document how increasing numbers of home owners are approaching retirement with mortgages, and a sizeable number of older mortgagors are dropping out of home ownership, particularly those affected by marital breakdown. These developments pose risks for a retirement incomes policy that has been fashioned around an assumption that the vast majority of seniors will ease into retirement as outright owners. A high rate of outright home ownership translates into low housing costs, because there is no mortgage to pay off, and so low-income outright owners can get by on smaller pensions (Castles 1998). This pillar of support for retirement incomes policy is expected to crumble. Yates and Bradbury (2010) project significant declines in Australian home ownership rates in the future, which will ultimately affect older age groups; these declines are already apparent among the young. Our forecasts shed light on these issues by modelling the consequences of demographic trends under different home ownership projections.

Population ageing is clearly a key demographic trend. However, there are other important demographic changes that could have profound impacts on the demand for housing subsidy. High rates of divorce and lower marriage rates mean that lone-person and sole-parent households, as well as de facto couples, have become an increasingly important demographic group in Australia; and this is expected to continue (National Housing Supply Council 2008). Home ownership rates are lower among these groups (Hendershott, Ong et al. 2009; Bourassa and Yin 2006). Furthermore, their income levels tend to be low relative to the rest of the adult population—according to HILDA data, average gross personal income of never-married singles was $27,229 in 2010 compared with $44,561 for the rest of the population. Enrolment rates for ISPs in 2010 were also higher (56%) for singles (widowers, never married, divorcees and separated) compared with couples (44% for marrieds and couples). We estimate that in 2010, the average amount of income support collected by singles was $12,017 per year, 34 per cent higher than the average amount collected by marrieds ($8,958). These differences are mirrored by housing subsidy differentials. Using AHURI-3M, we estimate that annual CRA entitlements for married persons averaged $2,502 in 2010, compared with $2,684 for singles. This growing demographic group could thus further contribute to an increasing demand for housing subsidy (particularly CRA and public housing).

The report addresses two key research questions in this first program of research.

1. What is the real value of housing subsidies received by Australian home owners and renters in 2011, 2021 and 2031, and how is the budgetary cost of financing these subsidies expected to change over this time frame?
2. What challenges do these trends pose for a sustainable Australian housing policy in the twenty-first century? In particular, what are the implications if home ownership rates were to decline as forecast by Yates and Bradbury (2010)?

1.2.2 Part 2: Secure leases

Our first program of research documents the housing system pressures caused by demographic change and declining rates of home ownership. While there are a range of possible responses to these pressures, we focus in our second program of research on one

[3] As will be explained in more detail in Chapter 2, tax subsidies are measured with respect to a tenure-neutral benchmark, where this is defined as the tax provisions applying to private investors in residential housing. Young home buyers would be able to subtract mortgage interest payments from assessable income under such a neutral benchmark.

innovative response to what we forecast will be a growing need for secure and affordable rental housing that far exceeds the public housing sector's present capacity. As we document in Chapter 5, some of the demographic subgroups primarily responsible for this need are likely to show rapid growth in the future. Under current housing assistance arrangements, this unmet need for secure and affordable rental housing is anticipated to grow to alarming levels.

To address this policy concern, we consider a reformed housing assistance program that would incentivise private landlords to provide a longer term lease in the private rental market and abide by an agreement to limit increases in rent to annual movements in the consumer price index (CPI). These leases would be offered to low-income groups deemed to be in need of security of tenure and currently eligible for public housing (e.g. sole parents with incomes below current income thresholds defining eligibility for public housing). Eligible households presently on waiting lists for public housing would forfeit their position upon accepting a secure lease from a private landlord, thus alleviating pressure on state authorities' public housing systems. Those households would also receive CRA if they meet eligibility criteria. We assume in our modelling that current social housing tenants will remain subject to their present rent costs (i.e. rents at 25% of assessable income) and security of tenure arrangements. The group of low-income households that do not meet eligibility criteria for secure leases would be expected to secure accommodation in private housing markets and, if renting, they would receive CRA if eligible.

This second program of research addresses three key research questions.

1. How many households require subsidy in the form of our proposed secure leases? What is their breakdown by age cohort, household type, income group and geographical location?
2. What subsidy is required in order to incentivise a sufficient number of landlords to offer eligible low-income households with long-term (five-year) security of tenure?
3. How might this alternative housing assistance arrangement impact on the Federal Budget, as compared to current subsidy programs? And would there be savings to state government budgets if they provided the 'incentivising' payment to landlords instead of accommodating eligible households in public housing?

1.3 Structure of the report

In Part 1, we examine the possible impacts of demographic change on housing subsidies in Australia. We begin, in Chapter 2, with an explanation of the methodology used to project future population and tenure profiles. These are the key building blocks employed to arrive at the forecast budget costs of housing subsidy in 2021 and 2031 (the time horizons considered in this project). We also address housing subsidy measurement issues in this chapter. A discussion of key findings follows in Chapter 3; much of the focus here is on forward estimates of housing assistance outlays, tax revenues foregone and additional outlays on ISPs. These forward estimates are broken down by household type and age profile. The demographically driven forward estimates suggest that the present housing assistance arrangements will prove unsustainable and demand a policy response.

Part 2 presents one possible response to the budgetary issues evidenced by the empirics presented in Chapter 3: secure leasing. Chapter 4 offers a detailed description of our proposed secure lease initiative. In Chapter 5, we estimate the number of public-housing-eligible households that would likely welcome secure leases as a source of affordable and secure rental housing, using the Household, Income and Labour Dynamics in Australia (HILDA) Survey. The following chapter presents the economic theory used to generate our formula for calculating the incentivising premium that would be necessary to persuade 'mum and dad' investors to offer secure five-year leases to tenants. This premium is designed to compensate investors for the option value that is lost when 'locking up' their property

investment for five years. We also discuss the practical steps that are necessary to operationalise secure lease incentivising premiums. In Chapter 7 we report budget cost estimates for the incentivising premium, and compare these with budget cost estimates of alternatively supplying public housing to meet the estimated need for secure and affordable rental housing that cannot be met from the current stock of public housing. Chapter 8 offers some concluding remarks on the topics addressed in Parts 1 and 2.

PART 1: IMPACTS OF DEMOGRAPHIC CHANGE ON HOUSING SUBSIDIES IN AUSTRALIA

2 DATA AND RESEARCH METHODS

2.1 Data sources[4]

We draw on three independent data sources in order to create a projected Australian population profile at three different points in time: years 2011, 2021 and 2031. We describe these data sources in turn below.

Base population data from the HILDA Survey

The 2011 HILDA Survey forms the basis from which forecast demographic profiles are generated. The HILDA Survey contains a rich array of information on respondents' demographic, labour market, income, health, housing and neighbourhood characteristics. Importantly, it contains detailed records of private income by income source (e.g. earnings, interest, dividends, etc.)—information that is critical to the calculation of imputed tax liabilities, ISPs, as well as housing subsidy eligibility and entitlements. The survey's own cross-section population weights have been applied to produce population-level estimates for 2011. The year 2011 is the base year for measurement of Australia's housing subsidies because this is the latest year of the updated AHURI-3M (the microsimulation model used to simulate the operation of Australia's tax and income support systems). The use of AHURI-3M is critical for accurate measurement of housing subsidies.

Demographic projection data from the Australian Bureau of Statistics' population projection series

A second key data source is the Australian Bureau of Statistics (ABS) population projections. The most relevant ABS population projections are sourced from the ABS's *Household and Family Projections, 2011 to 2036*, issued in March 2015 (ABS 2015). The ABS projections rely on assumptions about key biographical and mobility variables influencing future demographic trends, including future levels of fertility, mortality, internal migration and net overseas migration (NOM). Economic variables and policy parameters that could affect these forecasts are assumed to remain constant over the projection period. The ABS produces three projections (Series A, B and C), which are generated based on alternative assumptions about the values of key biographical and mobility variables. Series B supposes that current trends in fertility, life expectancy at birth and NOM continue unchanged, and we have adopted these conservative assumptions in the modelling exercises that apply ABS Series B growth rates to our base data from the 2011 HILDA Survey.[5]

The population projections are produced using a cohort-component method, whereby assumptions about the key variables are applied to sub-groups within the base population at time *t* to obtain a projected population for the following year *t*+1. The assumptions are then reapplied to the projected population in year *t*+1 to obtain a projected population for the following year *t*+2, and so on, until the end of the projection time frame is reached (ABS 2008).

Home ownership projection data from Yates, Kendig et al.

Yates, Kendig et al. (2008) report age-specific home ownership rate projections over two 20-year periods: 2006–26 and 2026–46. The approach is based on long-run trends in home ownership that are calculated from the 1981 and 2001 censuses. A cohort projection methodology is then used to forecast future age-specific home ownership rates in 2026 and 2046. We follow the same approach, but apply the long-run trend estimates in home ownership over the time frame 2011–31.

[4] A more detailed description of data sources can be found on pages 12–13 of this project's Positioning Paper (Cigdem, Wood et al. 2015).

[5] For more details on the assumptions applied by the ABS, refer to ABS (2008). Series A and C (which we have not utilised) are based on high and low assumptions for each of the key variables.

The Yates, Kendig et al. forecasts are listed on the left-hand panel of Table 1; they project significant declines in the middle age groups. For example, rates of ownership in the 45–54 year age group are projected to fall by 10 *percentage points*, from 78 per cent in 2006 to 68 per cent in 2026, or an annual average *rate of percentage change* equal to 0.68 per cent. However, because of population ageing, there is a modest fall in the 'all ages' rate of home ownership of only 1 percentage point, from 70 per cent in 2006 to 69 per cent in 2026.

2.2 Research methods

2.2.1 Demographic projections

A critical first step in projecting demographic change was using the ABS's *Household and Family Projections, 2011 to 2036* (2015) to age the base HILDA data. The ABS projections were made available via a SuperTABLE data cube and provided a projected count of persons for each year from 2011 to 2036, by state and territory, and broken down by living arrangement[6]; as well as by age group (in five-year increments). We used these population count projections to first calculate the implied population growth rates over our forecast period (2011–31). We then used these population growth rates to 'age' the HILDA data, by adjusting the 2011 HILDA cross-section population weights corresponding to each responding person that is aged 15 years or older and financially independent.[7] Thus, if single person households living in New South Wales (NSW) and aged between 25 and 34 years are expected to grow in number by 20 per cent over the time frame 2011–31, the cross-section population weight is increased by 20 per cent to generate a population forecast for this subgroup in 2031.

The total 2011 Australian population count is 15.5 million according to the HILDA population weights, which is lower than the 22.3 million people reported by the ABS for the same year. There are two reasons for this discrepancy. Firstly, we confine the HILDA responding person dataset to persons aged 15 years and over, while the ABS's population count includes persons of all ages.[8] Secondly, we add a further sample restriction by omitting persons who are not financially independent .[9]

2.2.2 Tenure projections

Projected rates of home ownership are based on a cohort methodology that uses past (1981–2001) changes in a birth cohort's rate of home ownership to project how home ownership rates will change as a cohort ages.[10] The methodology is developed and applied in Yates, Kendig et al. (2008) and is explained in detail in our Positioning Paper (Cigdem, Wood et al. 2015: 12–13).

The average annual rate of change in home ownership, in each age group used to forecast home ownership rates, is listed in column 3 of Table 1. We apply these figures to the 2011 HILDA-derived rates in the same age groups. For instance, the 45–54 years age group has a

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[6] There are 15 different living arrangement types in the ABS projections, while HILDA identifies 26 different household classifications. To make the living arrangement classifications consistent between HILDA and the ABS, we created a concordance using HILDA's household type variable (_hhtype) and person's relationship in household (_hhrih). In doing so, we were able to condense HILDA's 25 household classifications into the 15 categories in the ABS report.

[7] This is the relevant population for the purposes of analysing future trends in home ownership.

[8] The ABS (2015) population estimate of persons aged 15 years and over is 18.1 million.

[9] Housing assistance in Australia is only available to financially independent individuals aged 15 years and over.

[10] For example, suppose that in a base year (1981) persons 25–34 years old had a home ownership rate of 25 per cent, and 20 years later (2001), when they were aged 45–54 years, their rate of home ownership has climbed to 45 per cent. This is an increase of 1 percentage point per year. The method uses this annual 1 percentage point increase to project how the home ownership rate of today's 25–34 years age group will evolve in the future. If the 25–34 years age group's rate of home ownership today is lower than it was in the base year, there will be a corresponding decline in the predicted future home ownership rate of today's 45–54 year olds. A limitation of this method is that home ownership rates remain constant in the youngest, second youngest and oldest age groups.

73.9 per cent rate of home ownership in 2011 and is projected to decline by 0.63 per cent in each subsequent year of the forecast period—so the forecast rate of home ownership in that age group in 2021 (2031) is 69 per cent (64.4%) (see right-hand panel of Table 1). Over the forecast period of our study, we expect steep declines in the rates of home ownership among the 45–54 and 55–64 years age groups. However, population ageing cushions the 'all ages' rate of home ownership so that it is more or less stable.

Table 1: Actual and projected age-specific home ownership rates, 2011, 2021, 2031

	Yates, Kendig et al. (2008) home owner rates (%)			Our home owner rates using Yates, Kendig et al. (2008) forecasts (%)		
	Actual	Projected	Annual rate of change 2006–26[1]	Actual	Projected	
Age range	2006	2026		HILDA 2011	HILDA 2021	HILDA 2031
15–24	24	24	0.00	4.9	4.9	4.9
25–34	51	51	0.00	28.5	28.5	28.5
35–44	69	68	-0.07	60.2	59.8	59.4
45–54	78	68	-0.68	73.9	69.0	64.4
55–64	82	76	-0.38	80.0	77.0	74.1
65 and over	82	82	0.00	80.4	80.4	80.4
All ages	70	69	-0.07	57.7	58.4	58.3

Note: 1. The annual rate of change has been calculated using the formula $(ho_{t+j}/ho_t)^{1/20}–1$ where ho_t+j is forecast home ownership rate in t+j and ho_t is the home ownership rate in base year t.

Source: Table 3.2 of Yates, J., Kendig, H., Phillips, B. (2008) *Sustaining fair shares: the Australian housing system and intergenerational sustainability*, Final Report no. 111. Australian Housing and Urban Research Institute Limited, Melbourne.

The projections for public housing, 'other' tenures and private rental housing rest on the following key assumptions.

- The *number* of public-housing renters in *each age group* remains unchanged from 2011–31, but the *tenure share* declines as a result.
- The predicted declining rates of home ownership in the middle age group ranges is accommodated by assuming that private rental housing opportunities are accessed by those in these age groups who either fall out of home ownership or form new households, but cannot access home ownership. In these age groups the share of private rental housing increases as a result of this assumption.
- The 'other' tenure (i.e. rent-free and group households) is assumed to maintain a constant tenure share over the forecast period.

If we simply applied the demographic projections by ageing the HILDA data, then tenure profiles would differ between those implied by these assumptions and the cohort-based forecast home ownership rates reported in Table 1. We therefore need to redistribute some households to other tenures so that the projected tenure scenarios are satisfied when we age the HILDA data. To achieve this, we run a series of weighted multinomial logit models that are capable of producing predicted probabilities of residing in one of four different housing tenures. The four tenure types are: (i) home ownership; (ii) private rental; (iii) public rental; and (iv) all other tenures (i.e. persons living rent free or boarding). The dependent variable therefore equals: 1 if person x in age range y belonged to a home owning household in 2011; 2 if they were in private rental (the base category); 3 if they were in public rental housing; and 4 if they were in the 'all other tenure' group. Nine-year age ranges are used up to the under-

55 years threshold. As there are small numbers of renters among persons aged 55 and over[11], convergence in the multinomial logit models cannot be achieved for nine-year age bands beyond this threshold. Thus, for persons in age ranges 55–64 and 65 and over, we estimate a weighted binary logit model where the dependent variable is equal to tenure type y, and zero otherwise.

We estimate a separate model for projection years 2021 and 2031, weighting each observation using the modified HILDA population weights to take into account the changing demographic profiles in the two years as forecast by the ABS. A large array of independent variables are included in the models to take into account the socio-economic, demographic, human capital and geographical influences on tenure outcomes.[12]

The weighted binomial and multinomial logit models' coefficient estimates are deployed to estimate the predicted probability that any person in the sample was a home owner, residing in public housing, or in 'other' tenure in projection year x (2021 or 2031). Those with the highest predicted probabilities of being in public housing in (say) year 2021 are assigned to that tenure until the number of public housing tenants is equal to the counts that satisfy our tenure forecasts. In this case, the forecast is for an unchanged number of tenants and so we assign (starting with the person having the highest probability) sampled persons to public housing in 2021 (and 2031) until the modified population weights for that year indicate that we have reached a forecast population-weighted number of tenants equal to that in the base year. Because of population growth among groups typically housed in public housing, and the assumption that the number of households in public housing is fixed, we need to reassign some households that were resident in public housing in 2011.[13] They are transferred to whichever tenure type they have the highest predicted probability of occupying. Exactly the same assignment rules are followed for the 'other' tenure category, where the constraint this time is that the 'other' tenure share remains unchanged. For home owners, sampled persons with the highest predicted probability of being home owners in 2021 (2031) are assigned to home ownership until the modified population weights for that year indicate that we have reached the forecast count of home owners in 2021 (2031).[14] In this case, the residual—those left over once home ownership forecasts are met—is taken up by the private rental tenure.

Table 2 lists our expected 2021 and 2031 count and share figures for home ownership, public housing, private renting, and other tenures, all broken down into the same age groups as shown in Table 1. There are some key trends worthy of note. Consider first the count and tenure-share forecasts for home ownership. Although there are sharp declines in ownership attainment rates in the middle age ranges, there are still increases in the number of home owners. So, in the 45–54 years age group, home ownership rates plunge from 74 per cent to 64 per cent over the time horizon; but, because of population increase and ageing effects, the 2031 projected number of home owners is, at 2.2 million, roughly 65,000 higher than in 2011. In those same middle age groups, we expect a sharp increase in both the count and tenure-share measures with respect to private rental housing. Again taking the 45–54 years age group to illustrate, we project a near doubling in the number of tenants in private rental housing over the period (from 521,000 to 947,000), which pushes up its tenure share from 18 per cent to 28 per cent. These trends are repeated (though less pronounced) in the 35–44 and 55–64 years age groups.

[11] Only 11 per cent of persons aged 55 or over were in private rental housing in 2011, as compared to 36 per cent of persons aged between 15 and 45 years.

[12] Odds ratios from the weighted binomial and multinomial logit models for each age range (and projection year) are available from the authors upon request.

[13] That is, not all those with household characteristics typical of those housed in public housing in 2011 are still able to find public housing tenancies in 2021 or 2031.

[14] These assignments are separately conducted in each age range listed in Table 2.

Population ageing results in a large increase in the number of elderly people (65 years and over) housed in all tenures other than public housing (assuming the total number of tenants is fixed at the 2011 level). The number of elderly home owners soars from 8.7 million to 11.6 million over the time frame—a trend increase that could have major impacts on government tax revenues and budget spending on age pensions. A second important feature is the very large increase in the number and tenure share of private rental housing among the elderly. This increase comes about because we assume no expansion in public housing. Those elderly persons, who would have been accommodated in public housing if it had been expanded to meet growing need, instead find themselves renting in private rental housing. The projected number of elderly private renters more than doubles from its 2011 level of 246,000 to 581,000 in 2031.

Table 2: Actual and projected age-specific tenure shares and distribution, 2011 (actual), 2021 and 2031 (projected)

		Owners		Public renters		Private renters		Other tenures		All tenures*	
Age range	Year	Row (%)	Count	Row (%)	Count	Row (%)	Count	Row (%)	Count	Row (%)	Count
15–24	2011	4.9	74,707	4.2	64,545	45.4	689,443	45.5	691,306	100	1,520,001
	2021	4.9	64,560	4.9	64,545	44.7	588,101	45.5	598,413	100	1,315,619
	2031	4.9	71,027	4.5	64,545	45.1	653,248	45.5	659,431	100	1,448,251
25–34	2011	28.5	843,480	2.8	82,431	51.6	1,525,426	17.1	504,955	100	2,956,292
	2021	28.5	966,648	2.4	82,431	51.9	1,761,051	17.1	579,989	100	3,390,119
	2031	28.5	994,389	2.4	82,431	52.0	1,813,406	17.1	596,634	100	3,486,860
35–44	2011	60.2	1,751,828	2.9	82,964	29.4	856,299	7.5	216,959	100	2,908,050
	2021	59.9	1,947,484	2.6	82,964	30.1	979,821	7.5	242,947	100	3,253,216
	2031	59.5	2,200,736	2.2	82,964	30.8	1,141,986	7.5	276,389	100	3,702,075
45–54	2011	73.9	2,099,345	2.8	80,994	18.3	521,013	5.0	141,331	100	2,842,683
	2021	69.0	2,111,535	2.7	80,994	23.3	713,956	5.0	152,092	100	3,058,577
	2031	64.4	2,164,364	2.4	80,994	28.2	947,364	5.0	167,032	100	3,359,754
55–64	2011	80.0	1,862,749	4.2	97,340	12.2	285,039	3.6	83,984	100	2,329,112
	2021	77.1	2,090,649	3.6	97,340	15.8	427,738	3.6	97,720	100	2,713,447
	2031	74.1	2,155,931	3.4	97,340	18.9	550,101	3.6	105,032	100	2,908,404
65 and over	2011	80.4	2,138,759	5.2	137,479	9.3	246,439	5.1	136,054	100	2,658,731
	2021	80.4	3,082,708	3.6	137,479	10.9	416,938	5.1	196,312	100	3,833,437
	2031	80.5	4,007,129	2.8	137,479	11.7	581,134	5.1	252,443	100	4,978,185
All ages	2011	57.7	8,770,868	3.6	545,753	27.1	4,123,659	11.6	1,774,589	100	15,214,869
	2021	58.4	10,263,584	3.1	545,753	27.8	4,887,605	10.6	1,867,473	100	17,564,415
	2031	58.3	11,593,576	2.7	545,753	28.6	5,687,239	10.4	2,056,961	100	19,883,529

Note: *There is a small discrepancy in the age-specific population figures reported in this table and those reported in the section reporting ABS projections (see Section 3.1). This is because the totals reported here are counted after implementing Yates, Kendig et al.'s (2008) tenure projections,[15] while the total figures reported in the earlier section are counted before Yates' tenure projections are taken into account.

Source: Authors' own calculations using HILDA wave 11 and based on Yates, Kendig et al.'s (2008) assumptions.

[15] HILDA respondents with missing information on at least one of the variables used in the multinomial logit models (used to assign persons to a tenure group on the basis of Yates' tenure projections) were omitted from the weighted sample.

2.2.3 Estimates of housing subsidies: 2011, 2021, 2031

Housing subsidies have three main components. First there are housing assistance measures that are explicitly introduced to help households attain secure housing at affordable housing costs. The most important of these are CRA and public housing. Secondly, there are tax concessions favouring housing, the most important of which (in the present context) are the exemption of owner-occupiers' capital gains and net imputed rental income from assessable income under federal income tax, and the exemption of owner-occupiers' land values from state land tax. Thirdly, there are provisions in means tests for pensions and allowances, which offer preferential treatment to home owners. Central to our calculation of these subsidies is a microsimulation model (AHURI-3M), which contains a computer program that simulates the eligibility and entitlement criteria of all major ISPs, as well as the main provisions of the income tax system.

AHURI-3M

AHURI-3M is a comprehensive housing market microsimulation model that was originally based on the ABS Survey of Income and Housing Costs, but is now operationalised using the HILDA Survey.[16] The microsimulation model contains three components: a housing supply module, a housing demand module, and a tax-benefit simulator. The tax-benefit simulator and housing demand modules are of relevance in the present context. The former imputes tax liabilities, as well as eligibility for and entitlements to ISPs (e.g. the Age Pension) of those residing in each of the three main housing tenures. All the major taxation provisions and ISPs are modelled by the AHURI-3M simulator using *income units* as the unit of measurement.[17] This component of AHURI-3M also models the rebated rents that public housing tenants pay, the CRA entitlements of private renters, and the asset test concession in ISPs that is granted to owner-occupiers.

Housing assistance projections

The detailed rules that the state housing authorities employ in defining assessable income are used to impute the concessionary rents and thus housing costs of public housing tenants. The value of public housing tenants' housing assistance is defined as being equal to the difference between these subsidised rents (typically 25% of assessable income) and market rents. Market rents are imputed using the predicted values of a hedonic regression estimated using market rents in private rental housing as the dependent variable. The relevant ISP provisions are used to determine private renters' CRA eligibility, and CRA rent thresholds are used to impute entitlements. Housing costs after adjustment for CRA can then be calculated and private tenants' housing assistance is the amount of CRA payment that they are entitled to receive.[18]

Two series of 2021 and 2031 housing assistance projections are generated. In the first series, adjusted population weights that reflect ABS population projections are used to generate a modified distribution of households by tenure that is expected in 2021 and 2031. AHURI-3M is then run on this modified distribution to estimate the real value of CRA payments, as well as public housing assistance—assuming that tenure choices, incomes, prices, interest rates and employment are unchanged. This counterfactual exercise isolates the effect of demographic change on housing assistance.

A second series extends this exercise to incorporate our tenure projections that anticipate falling rates of home ownership in the middle age groups. As explained earlier, some households are shifted from home ownership into private rental housing to ensure that our

[16] A detailed description of the model design and key parameters can be found in Wood and Ong (2008).

[17] Income support program means tests are based on the *income unit*. An income unit comprises one or more persons whose command over income is shared between members of the unit (e.g. household) (ABS 1997).

[18] We assume that income units eligible to receive CRA enrol in the program.

housing tenure forecasts are met when applying 2021 and 2031 modified population weights. AHURI-3M is again used to estimate the housing assistance that these reassigned households might be eligible to receive when renting from a private landlord. Hedonic rent regressions are used to impute the market rents that these households pay in private rental housing. The housing assistance payments to these reassigned households are added to the housing assistance budget estimates from the first series of projections, to arrive at the combined effect of demographic and tenure change.

Tax subsidy and asset test projections

The housing demand module of AHURI-3M measures the economic costs that housing consumers incur as home owners. The economic cost measure includes operating costs such as maintenance costs and property rates, but also encompasses the costs of holding an asset such as housing (i.e. the costs of capital, net of capital gains). We take into account the tax treatment of each of these contributions to economic cost. This after-tax economic cost measure is frequently referred to as the home owner's 'user cost of capital'. The usual method used to measure tax subsidies employs a tenure-neutral approach, in which tax concessions to home owners are identified by reference to deviations from a benchmark set by the tax treatment of landlords (see Ling and McGill 1992; Bourassa and Grigsby 2000; and Poterba and Sinai 2008 for examples of this approach in the United States).[19] If owner-occupied housing were taxed in the same way as housing owned by landlords, (imputed) rents and one half of realised capital gains would be added to home owners' assessable income, while deductions would be allowed for mortgage interest, maintenance, local government property taxes and land taxes. Home owners would also become liable to land taxes on site values (unimproved capital values).

The measurement method uses AHURI-3M to estimate home owners' user costs of capital under existing and tenure-neutral tax arrangements. We use the difference in user costs under the alternative tax arrangements as our estimate of tax subsidies received by home owners. Home owners generally benefit from departures from the tenure-neutral tax treatment. The exceptions are home purchasers with highly leveraged owner-occupied housing: this class of home owner can have higher user costs under current tax provisions than under a tenure-neutral arrangement, because mortgage interest cannot be deducted from taxable income under current arrangements.

ISPs are subject to income and asset tests. There is a non-neutral assessment of the assets of home owners and renters. While renters have a higher asset threshold before ISPs are withdrawn (according to a tapered schedule), the value of owner-occupied housing is exempt for home owners. The value of this asset test concession is measured by simulating (using AHURI-3M) a hypothetical asset test that raises the asset threshold for home owners such that it equals the asset threshold for tenants who do not own their own home. However, under these hypothetical arrangements, home owners include the value of their homes (net of outstanding mortgage debt) in assessable assets. When, on making this change, the asset test 'binds', the value of the concession is set equal to the difference between the ISP entitlements under the hypothetical arrangements and the entitlement under current arrangements.[20]

Two series of tax subsidy and asset test concession projections are generated for 2021 and 2031, as for the housing assistance projections. Thus, we first run AHURI-3M on the modified distribution of households by tenure that is generated by adjusted population weights that take ABS population projections into account. The second series extends this exercise to incorporate our housing tenure forecasts, as described for the housing assistance projections.

[19] The authors have also used this approach to measure housing tax subsidies reported in their work for the Henry Tax Review (Wood, Stewart et al. 2010).

[20] The asset test is binding if it yields a lower pension or allowance than the income test.

It is important to bear in mind that the forward estimates of asset test concessions and tax subsidies are made on a ceteris paribus basis: incomes, prices, employment and other economic magnitudes are fixed, as well as the parameters of ISPs and tax provisions.[21] There are some important government reforms in the pipeline that are not in place in the base year used for forecasting purposes—for example, an increase in the age threshold for age pensions (to 67 years by 1 July 2023)—and these future changes have not been taken into account.

[21] The exception being parameters that we 'tweak' when estimating the budget cost of subsidies (e.g. the asset threshold in income support programs).

3 RESULTS AND ANALYSIS

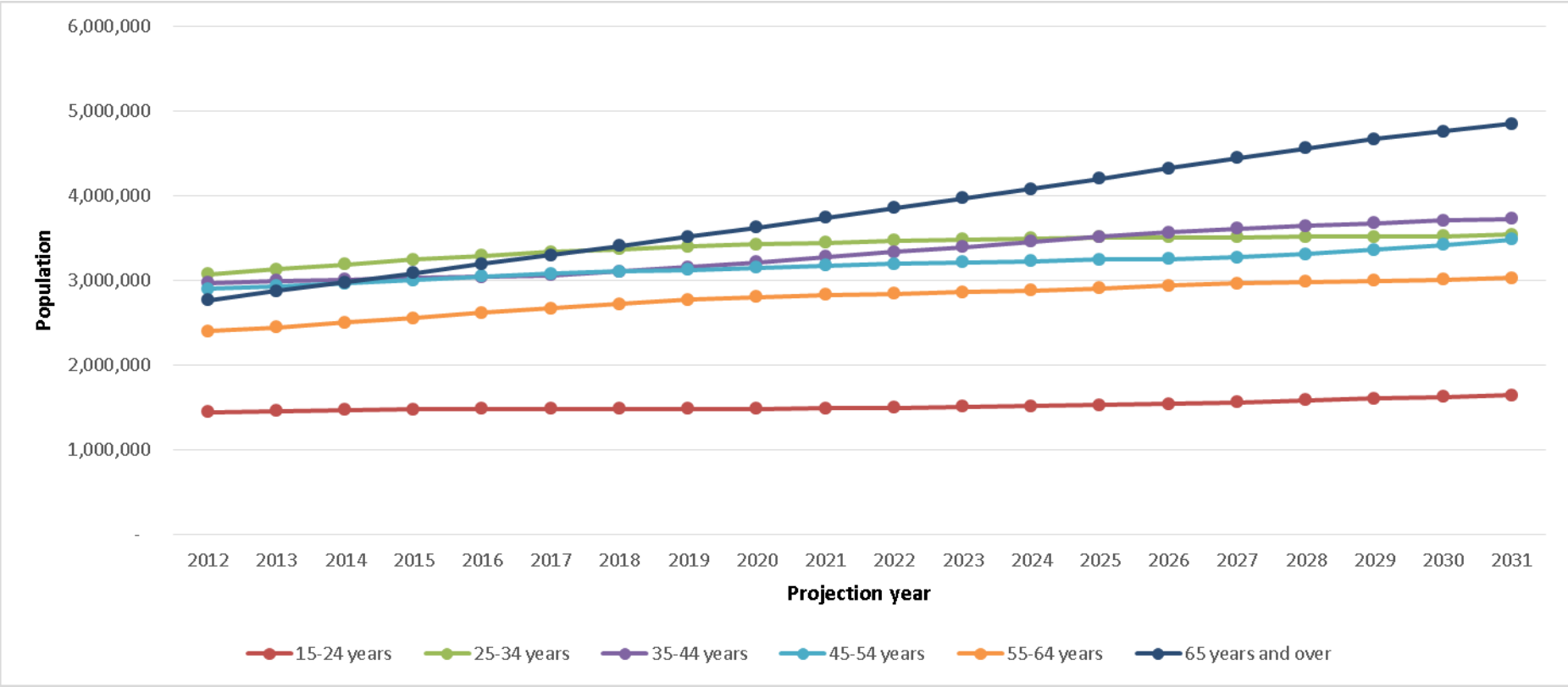
3.1 Demographic projections, 2011 to 2031

Figures 1 to 5 present the Australian population profile (aged 15 years and over) for the 20-year projection period (2011–31),[22] based on ABS population projections On applying the HILDA cross-section population weights we obtain a population estimate of 15.5 million Australians aged 15 years and over in 2011; this population figure is expected to grow to 17.6 million in 2021 before reaching 19.9 million in 2031 (the final year of our projection period). These population figures represent the pool of persons potentially eligible for housing assistance; so in aggregate, this pool of potential clients swells by a little over 28 per cent across the 20-year period 2011–31.

Population ageing results in a changing population composition, with older age cohorts growing relative to young age cohorts. Consider, for instance, the group that have reached pensionable age (65 years and over in 2011). Back in 2012, we find 2.8 million persons in this age range; this base figure soars to 3.7 million in 2021 and then 4.9 million in 2031—a total increase of 79 per cent over the time frame (see Figure 2). However, the age group that is entering the early stages of adulthood (15–24 years of age) is expected to remain virtually unchanged, with population numbers in 2031 only 5 per cent higher than in 2011 (see Figure 2). By 2031, the population will have completed a transition from one of youth dependency in the early post-war years to one of age dependency. Defining the working age range as 15–64 years, we find that at the start of the projection period there were 4.6 persons of working age to every one person of pensionable age; by the end of the projection period this ratio has slumped to 3.2 persons. These forecast trends are at the heart of policy concerns over the fiscal implications of population ageing. They will have potentially profound implications for the size and pattern of housing subsidies in the future, as the elderly receive much more support from housing tax concessions (see Yates 2009).

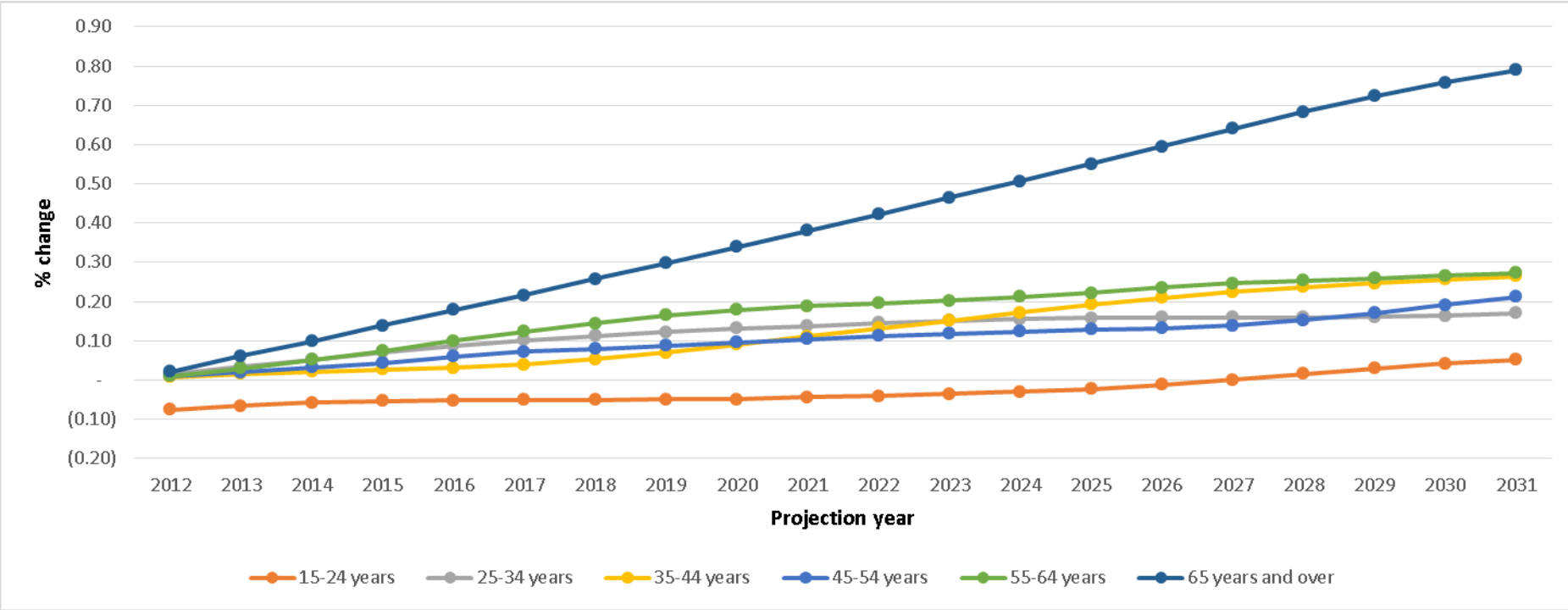
[22] The base population in 2011 consists of adults defined as 15 years and over, who are also financially independent. Dependent children are therefore omitted from this base population, even if older than 14 years of age. This restriction is imposed because dependent children are ineligible for housing assistance.

Figure 1: Projected population count, 2012–31, according to ABS projections, by age range



Notes: 1. The 2011 base population is generated using HILDA (2011) cross-sectional population weights and aged over the projection period (2011–31). Ageing is conducted by firstly estimating person-level population growth, as projected by the ABS, between 2011 (base year) and each projection year up to 2031, and adjusting HILDA's population weights (_hhwtrp) to reflect these population projections. Details of the ageing technique are explained in Section 2.2 of this report. 2. The base population is restricted to financially independent persons aged 15 years and over.

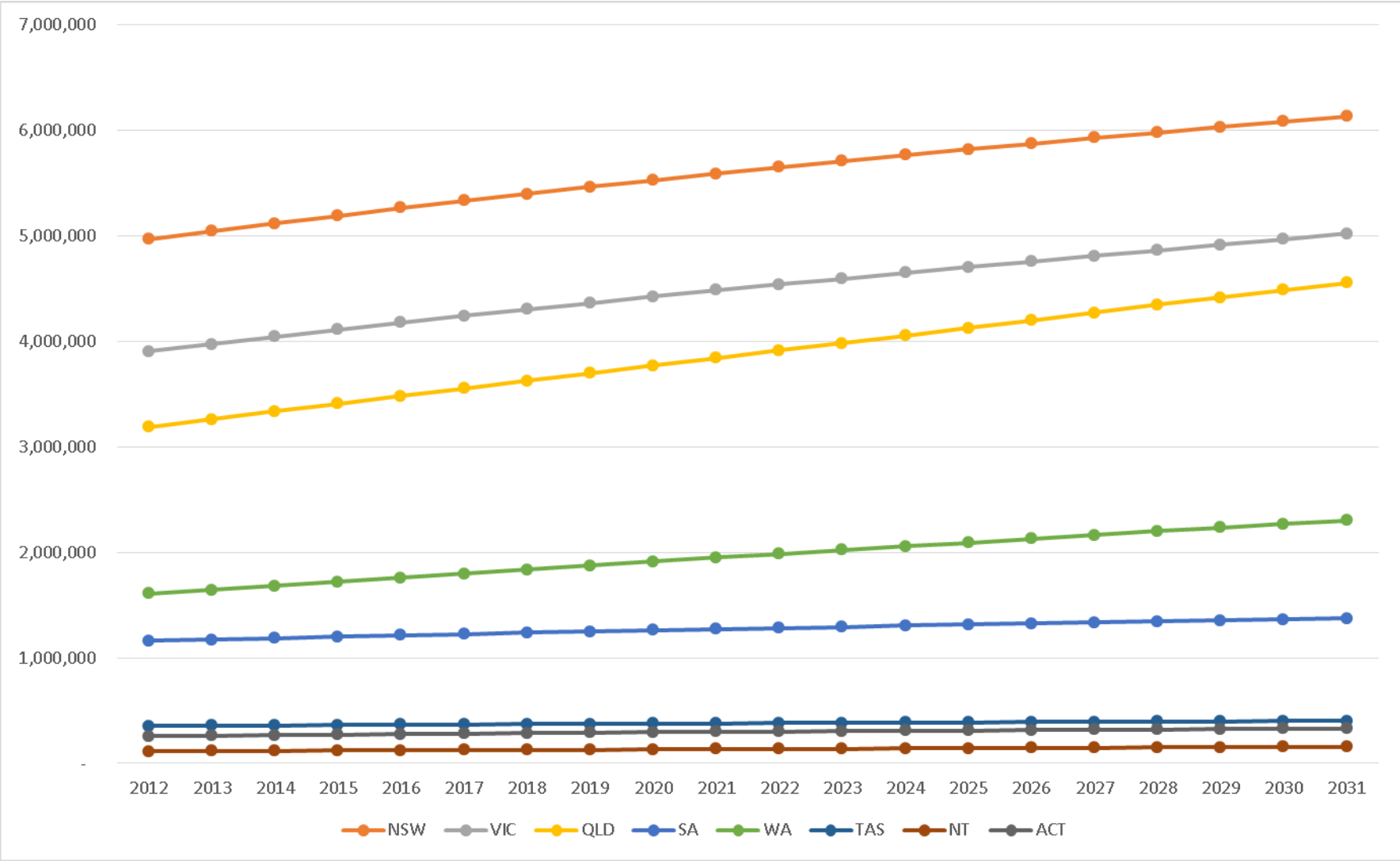
Figure 2: Percentage change in population between base year (2011) and projection year (x), by age range



Notes: See figure notes for Figure 1.

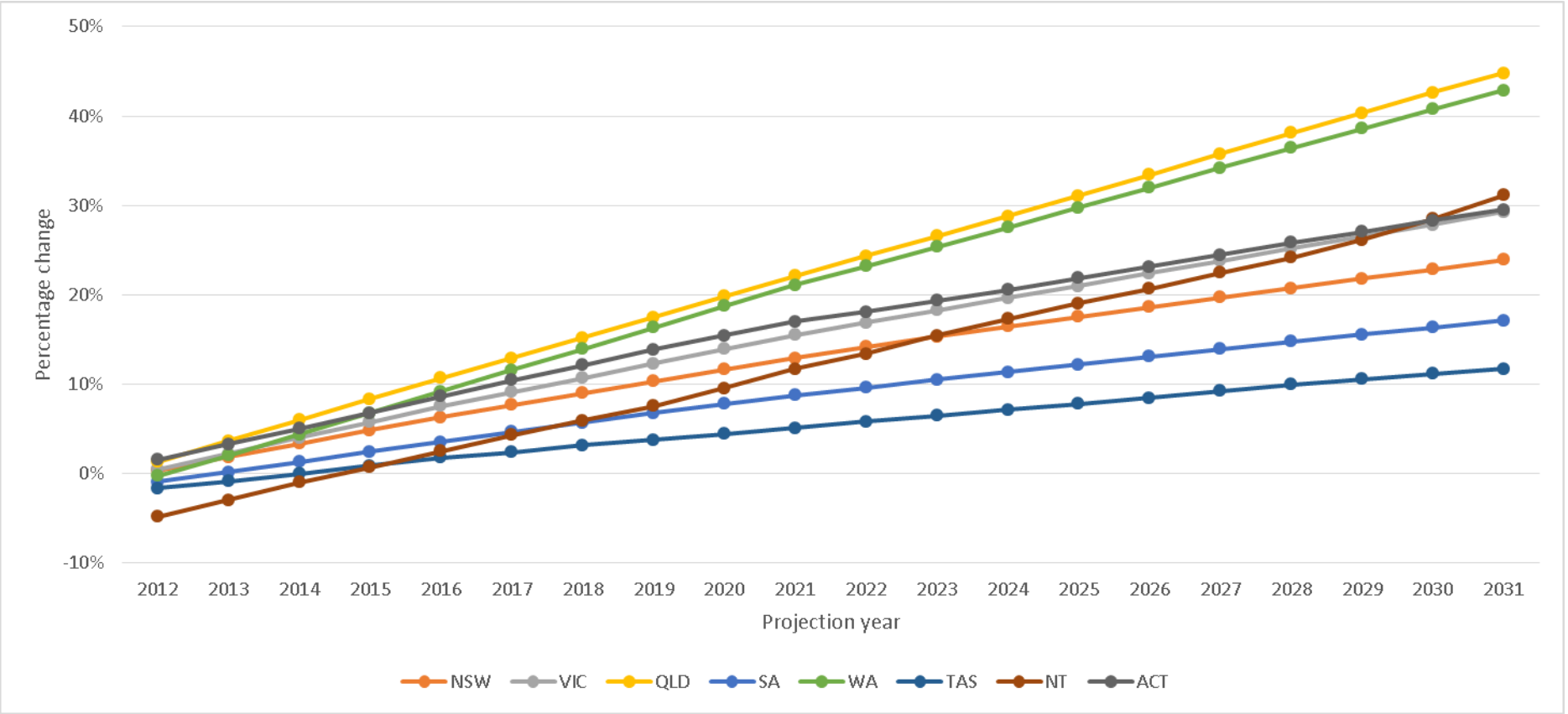
In Figures 3 and 4 we breakdown these demographic projections by state and territory. Queensland and Western Australia (WA) have the fastest growing populations (aged 15 years and over)—though these increases are coming off relatively low base-year numbers of 3.1 million and 1.6 million respectively. Because of these relatively low base figures, NSW and Victoria will grab a growing share of the nation's adult population, despite their slower population growth profiles. Thus, the gap between NSW's (Victoria's) adult population and that of WA increases from 3.34 million (2.27 million) in 2012 to 3.83 million (2.72 million) in 2031. There is one other very important dimension to the geography of Australia's population: increasing urbanisation. The major state capitals will all grow between 2011 and 2031, and their share of Australia's populations will increase.

Figure 3: Projected population count, 2012–31, according to ABS projections, by state



Note: See figure notes for Figure 1.

Figure 4: Percentage change in population between base year (2011) and projection year (x), by state



Notes: See figure notes for Figure 1.

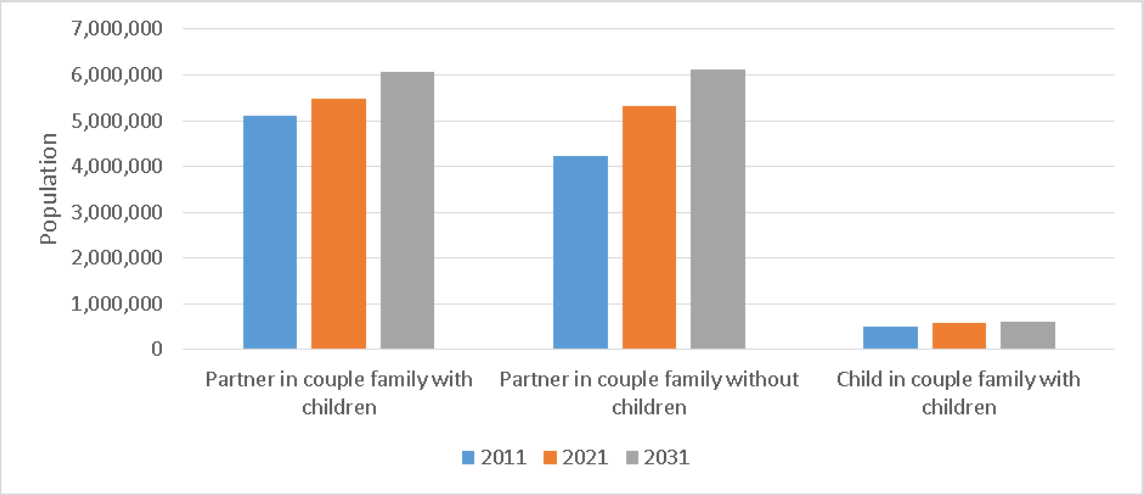
In Figure 5, panels a to d, we set forth the projected change in typical living arrangements within Australian households. The presentation follows an attribution approach: the units of analysis in Figure 5 are persons (financially independent and aged 15 years or over), and they are assigned to categories of living arrangements that are measured at the household level. The exercise paints a picture of changing living arrangements, in which lone person households continue their strong recent growth (see panel c). Males living alone rise from 1.1 million (6.8% of all adults) in 2011 to 1.5 million (7.5% of all adults) in 2031. There is a similar trend among females, but starting from a lower base and increasing faster than sole males. Indeed, by 2031 females living alone exceed the number of males living alone, rising from 1 million (6.4% of all adults) in 2011 to 1.55 million (7.8% of all adults) in 2031. These changes are important to housing market outcomes because those living alone have a higher cost of living, including higher housing costs—for example, two people living together will typically share a kitchen and a bathroom; if living alone they must duplicate these facilities.

Adults living together but with no children present (i.e. either 'empty nesters' or childless couples) are also a relatively fast-growing demographic (see Figure 5, panel a). Between 2011 and 2031 we expect the number of these persons to increase by 45 per cent, from 4.2 million to 6.1 million, pushing their share of the adult population up from 27.3 per cent in 2011 to 30.8 per cent in 2031. This is an important demographic for housing markets, because they have lower space needs than families but often occupy large homes relative to those needs—a pattern especially prominent among 'empty nesters'. Like singles living alone, childless couples are less well represented among the client groups of the main housing assistance programs (i.e. CRA and public housing), and so the increasing prominence of these demographic groups will tend to ease pressure on the budget cost of these programs.

Couples with children are a relatively slow-growing group. On the other hand, the number of female sole parents surges ahead by 38.4 per cent over the projection period, with their share of the adult population rising from 5.4–5.8 per cent (see Figure 5, panel b). Though there has been some speculation that singles are more inclined to form group households in order to economise on housing costs, the projections here show a 20 per cent fall in the number of persons living in group households (see Figure 5, panel d). This reflects slow population growth in younger age groups.

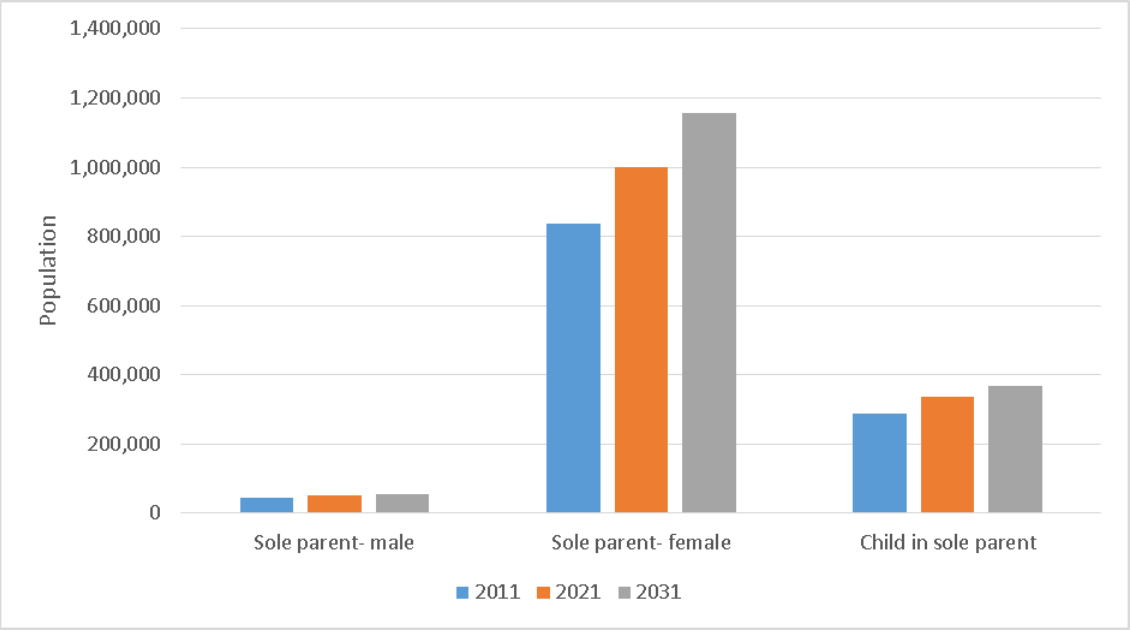
Figure 5: Projected population counts, 2012, 2021 and 2031, according to ABS projections, by living arrangement

(a) Couple families

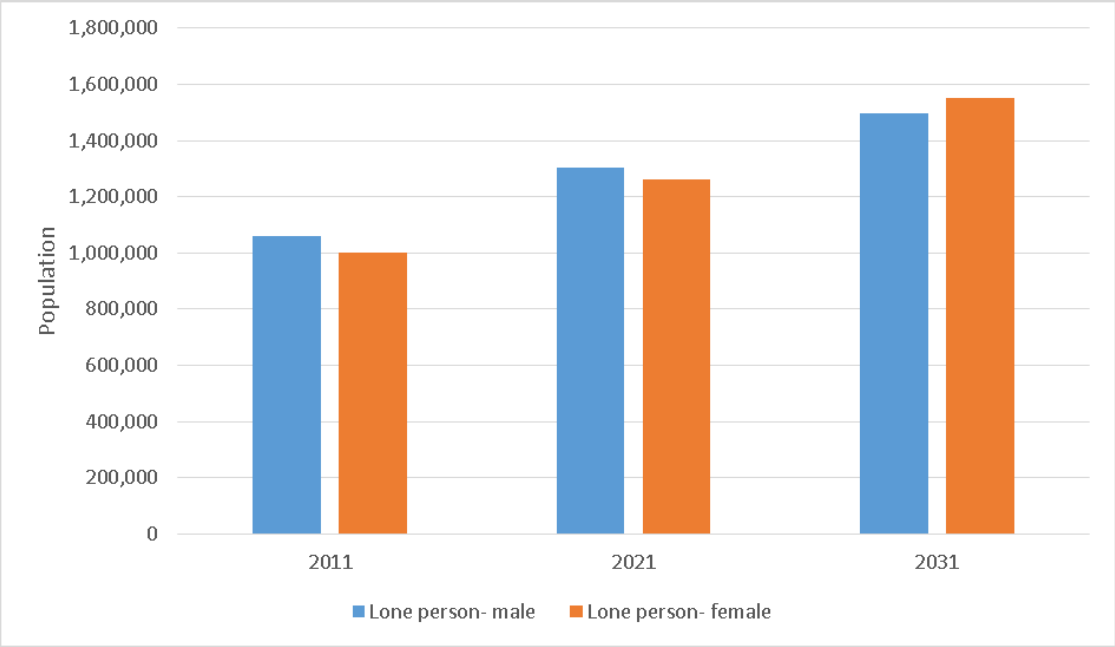


Notes: 1. Children aged under 15 years are not interviewed in the HILDA responding person files and are not present in this analysis. Dependent children over the age of 15 years are also omitted. 2. Living arrangement categories in the ABS projections were matched with HILDA data, using a combination of household type information (_hhtype) and information detailing each person's relationship in the household (_hhrih).

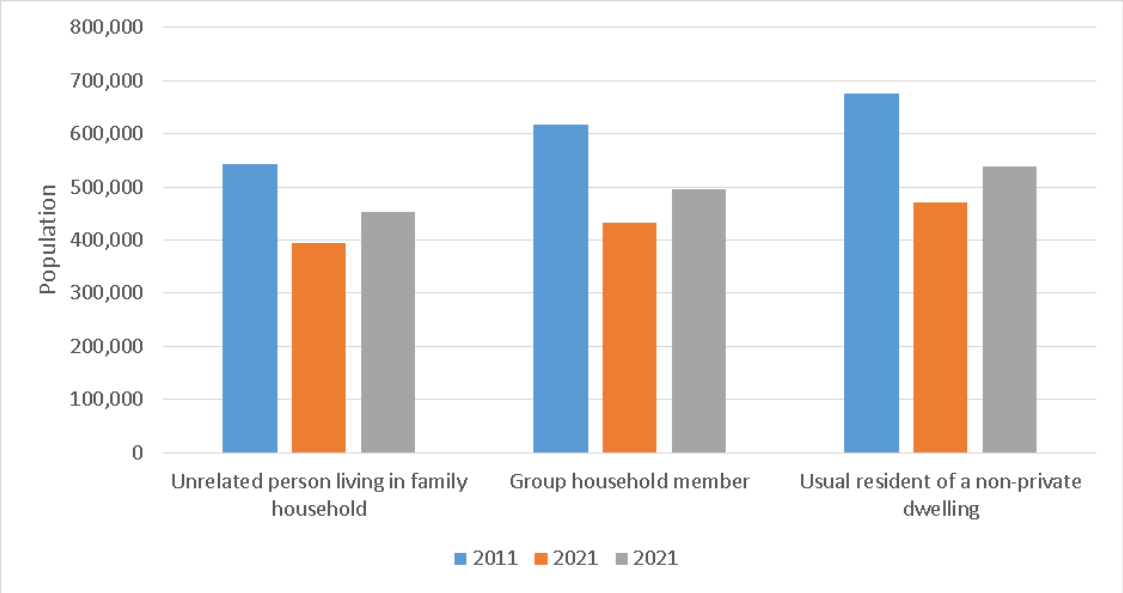
(b) Sole parent families



(c) Lone person households



(d) Other household types



3.2 Tenure projections, 2011 to 2031

Combining tenure-share forecasts with our projected demographic profiles is a critical step in our analysis of future housing subsidies. We employ our forecasts of change in the home ownership rate over the period 2006–26 to generate future population profiles by tenure. These forecasts are based on a cohort methodology that uses past changes in a birth cohort's rate of home ownership to project how home ownership rates will change as a cohort ages.[23]

[23] For example, suppose that in a base year, persons 25–34 years old had a home ownership rate of 25 per cent and 10 years later, when they were 35–45 years old, their rate of home ownership has climbed to 45 per cent—this is an increase of 2 percentage points per year. The method uses this 2 percentage point per year increase to project how the home ownership rate of today's 25–34 years age group will evolve in the future. If the 25–34 years age group's rate of home ownership today is lower than it was in the base year, we can predict a corresponding decline in the home ownership rate of today's 35–45 years group in the future.

The methodology is explained in detail in our Positioning Paper (Cigdem, Wood et al. 2015: 12–13) and is also discussed in Chapter 2 of this report (see Section 2.2).

In this section, we profile the changing Australian adult population living in the three housing tenures: home ownership, private rental housing and public housing. Table 3 considers home owners and presents their 2011, 2021 and 2031 projected population profiles, using a range of demographic and socio-economic measures.[24] The population of home owners (on a person basis) increases from 8.8 million in 2011 to 11.6 million in 2031 and is increasingly dominated by older married couples, who often still have dependent children to care for.[25] Indeed, by 2031 home ownership is out of reach for almost all those persons who have never been married or who suffer marital breakdown.

Home owners continue to be a relatively affluent group, with mean real household disposable income in excess of $90,000, but because the home owner profile is increasingly dominated by retirees,[26] there is little change over the forecast time frame. The older age profile of the population also drives an increase in the share of those not in the labour force and a falling rate of employment.

[24] For dichotomous variables such as 'males', the mean values represent the proportion of home owners that are males.

[25] Couple households with children over 45 falls slightly, from 45 per cent in 2011 to 44 per cent in 2031.

[26] Home owners aged 65 and over are 24 per cent of all home owners in 2011, rising to 34 per cent in 2031.

Table 3: Actual and predicted summary statistics for home owners in 2011, 2021, 2031

Variable	2011 (actual)		2021 (projected)		2031 (projected)	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Male	0.486	0.500	0.486	0.500	0.488	0.500
Age (years)	53.594	15.264	55.180	15.797	56.547	16.417
No. of dependent children	0.763	1.102	0.760	1.114	0.732	1.107
Australian born	0.712	0.453	0.733	0.442	0.736	0.441
English speaking	0.114	0.318	0.114	0.318	0.114	0.318
Non-English speaking	0.174	0.379	0.152	0.359	0.150	0.357
Married	0.725	0.446	0.818	0.386	0.821	0.384
De facto	0.090	0.287	0.080	0.272	0.072	0.259
Separated	0.020	0.139	0.008	0.092	0.007	0.084
Widowed	0.065	0.247	0.070	0.255	0.083	0.276
Divorced	0.053	0.224	0.019	0.137	0.014	0.119
Single, never married	0.047	0.211	0.004	0.060	0.002	0.048
Household disposable income ($0,000s)	9.347	7.030	9.497	6.759	9.270	6.804
Employed	0.633	0.482	0.611	0.488	0.579	0.494
Underemployed	0.040	0.195	0.033	0.179	0.031	0.172
Unemployed	0.012	0.107	0.006	0.076	0.004	0.065
Not in labour force	0.355	0.479	0.384	0.486	0.417	0.493
Postgraduate	0.053	0.225	0.050	0.218	0.048	0.214
Graduate diploma	0.070	0.255	0.071	0.257	0.069	0.253
Bachelor	0.149	0.356	0.150	0.357	0.146	0.353
Advanced diploma/diploma	0.104	0.306	0.108	0.310	0.107	0.309
Certificate (any)	0.249	0.433	0.247	0.431	0.245	0.430
Year 12	0.108	0.310	0.104	0.306	0.102	0.303
Year 11	0.266	0.442	0.270	0.444	0.284	0.451

Notes: 1. For dichotomous variables such as males, the mean values represent the proportion of home owners that are males. 2. Education qualifications represent highest educational attainment.

The changing profile of private renters is presented in Table 4. The demographic comparison of renters with home owners reveals that tenants are much younger and a much lower share of them are married. Indeed, the share of renting marrieds is expected to decline quite sharply, from 36 per cent of all private rental tenants in 2011 to only 25 per cent in 2031. There is a corresponding fall in the mean number of dependent children present in private rental households. Biographical disruptions in the form of bereavement, separation and divorce will become an increasingly important source of tenants for landlords. In aggregate, this group is predicted to take a rising share of rental leases, increasing from 13 per cent of all private rental tenants in 2011 to 26.5 per cent in 2031. Households in private rental are much less well off than home owners: their mean real household disposable income ($72,000 in 2011)

is roughly three-quarters that of the typical owner household, and the gap widens as the mean real household disposable income of private tenants falls to $62,000 in 2031.[27] The principle driver of this trend appears to be the growing numbers of renters who live in single person households, since employment rates fall only marginally and there is little change overall in the education profile.

Table 4: Actual and predicted summary statistics for private renters, 2011, 2021, 2031

Variable	2011 (actual)		2021 (projected)		2031 (projected)	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Male	0.514	0.500	0.494	0.500	0.488	0.500
Age (years)	37.1	14.6	39.6	15.4	41.2	16.2
No. of dependent children	0.607	1.013	0.488	0.885	0.491	0.886
Australian born	0.574	0.494	0.492	0.500	0.500	0.500
English speaking	0.111	0.314	0.129	0.336	0.137	0.343
Non-English speaking	0.315	0.464	0.378	0.485	0.363	0.481
Married	0.363	0.481	0.251	0.434	0.248	0.432
De facto	0.192	0.393	0.214	0.410	0.212	0.409
Separated	0.034	0.181	0.055	0.227	0.055	0.229
Widowed	0.029	0.167	0.054	0.226	0.068	0.251
Divorced	0.063	0.243	0.134	0.340	0.142	0.349
Single, never married	0.319	0.466	0.293	0.455	0.276	0.447
Household disposable income ($0,000s)	7.241	4.522	6.281	3.827	6.259	3.844
Employed	0.703	0.457	0.665	0.472	0.648	0.478
Underemployed	0.095	0.294	0.097	0.296	0.094	0.292
Unemployed	0.050	0.218	0.057	0.232	0.057	0.231
Not in labour force	0.247	0.431	0.278	0.448	0.295	0.456
Postgraduate	0.074	0.261	0.083	0.275	0.077	0.267
Graduate diploma	0.041	0.199	0.036	0.187	0.037	0.188
Bachelor	0.186	0.389	0.188	0.391	0.176	0.381
Advanced diploma/diploma	0.084	0.277	0.075	0.263	0.075	0.263
Certificate (any)	0.224	0.417	0.228	0.420	0.228	0.420
Year 12	0.181	0.385	0.158	0.364	0.156	0.363
Year 11	0.211	0.408	0.233	0.423	0.250	0.433

Notes: 1. For dichotomous variables such as males, the mean values represent the proportion of home owners that are males. 2. Education qualifications represent highest educational attainment.

Table 5 shows the changing profile of public housing tenants. While we have assumed that the same number of tenants (545,000) is accommodated in public housing over the forecast

[27] Tenants in single person households were 41 per cent of all private renters in 2011, but their share is anticipated to increase to 48 per cent in 2031.

period, the profile of the group will change as a result of turnover due to mortality, biographical events (e.g. divorce) and ageing. A second reason for profile change is population growth among the subgroups typically resident in public housing.[28]

The age profile of public housing tenants is intermediate between that of home owners and private renters. A bigger contrast is evident in the other demographics; while the 'two big tenures' are gender balanced, public housing is increasingly feminised, with the female share projected to rise from 54 per cent in 2011 to 61 per cent in 2031. Although marrieds are expected to almost disappear from the tenure, the average number of dependent children increases over the 2011–31 time horizon. This change is due to a sharp increase in the number and tenure share of sole parents (from 10.4% to 19.7%), which reflects the growing prominence of marital breakdown—one in five tenants experience separation/divorce in 2011, climbing to two in five by 2031. The economic wellbeing of public housing tenants is relatively poor, with mean real household disposable incomes that are roughly half those of home owners in 2011. This disparity is forecast to deteriorate further, with household disposable incomes in public housing falling from $49,000 in 2011 to $31,000 in 2031, or roughly one-third the disposable incomes of home owners. The decline in public housing tenants' incomes is in large part due to the changing demographics of the group, especially the sharp projected increase in sole parents and lone person households. A little under two-thirds of tenants were unable to participate in the labour force in 2011, but this is anticipated to rise to almost 90 per cent in 2031. These startling employment and income trends are in part due to the increasingly educationally disadvantaged clients of public housing landlords. Almost one in two public housing tenants have year 11 as their highest educational qualification in 2011, and this is projected to rise to around two-thirds of tenants in 2031. The overall impression is one of an increasingly residualised and feminised tenure, housing the most disadvantaged people in society.

[28] We adjust HILDA population weights for each sample member to project population numbers and their growth as forecast by the ABS. When we do so for public housing tenants, we get an increase in the number of persons housed in public housing due to population growth. However, our assumption is that public housing will not grow to accommodate this growth. In order to satisfy this assumption, we reassign some public housing tenants (to other tenures) according to our multinomial models' predicted probabilities of being a public housing tenant. Those with the lowest predicted probabilities are reassigned.

Table 5: Actual and projected summary statistics for public renters, 2011, 2021, 2031

	2011 (actual)			*2021 (projected)*			*2031 (projected)*		
Variable	**Population**	**Mean**	**Standard**	**Population**	**Mean**	**Standard**	**Population**	**Mean**	**Standard**
Male	545,753	0.456	0.498	550,482	0.392	0.488	549,284	0.387	0.487
Age (years)	545,753	49.510	19.015	550,482	48.588	17.475	549,284	48.606	17.539
No. of dependent children	545,753	0.500	1.087	550,482	0.620	1.231	549,284	0.635	1.260
Australian born	545,753	0.713	0.452	550,482	0.710	0.454	549,284	0.688	0.463
English speaking	545,753	0.076	0.264	550,482	0.058	0.234	549,284	0.055	0.228
Non-English speaking	545,753	0.211	0.408	550,482	0.232	0.422	549,284	0.257	0.437
Married	545,045	0.225	0.418	550,482	0.007	0.083	549,284	0.008	0.086
De facto	545,045	0.136	0.342	550,482	0.146	0.353	549,284	0.142	0.349
Separated	545,045	0.064	0.244	550,482	0.126	0.331	549,284	0.136	0.343
Widowed	545,045	0.099	0.299	550,482	0.053	0.224	549,284	0.056	0.230
Divorced	545,045	0.142	0.349	550,482	0.270	0.444	549,284	0.262	0.440
Single, never married	545,045	0.334	0.472	550,482	0.399	0.490	549,284	0.396	0.489
Household disposable income ($0,000s)	545,753	4.951	3.566	550,482	3.111	6.583	549,284	3.048	6.967
Employed	545,753	0.304	0.460	550,482	0.045	0.208	549,284	0.040	0.195
Underemployed	545,753	0.060	0.238	550,482	0.011	0.104	549,284	0.009	0.096
Unemployed	545,753	0.060	0.237	550,482	0.074	0.262	549,284	0.074	0.262
Not in the labour force	545,753	0.636	0.481	550,482	0.881	0.324	549,284	0.886	0.317
Postgraduate	538,319	0.025	0.155	550,482	0.012	0.111	549,284	0.015	0.120
Graduate diploma	538,319	0.019	0.135	550,482	0.006	0.079	549,284	0.007	0.082
Bachelor	538,319	0.042	0.200	550,482	0.008	0.089	549,284	0.010	0.102
Advanced diploma/diploma	538,319	0.045	0.207	550,482	0.007	0.081	549,284	0.006	0.074
Certificate (any)	538,319	0.241	0.428	550,482	0.237	0.425	549,284	0.236	0.425
Year 12	538,319	0.133	0.340	550,482	0.090	0.287	549,284	0.101	0.302
Year 11	538,319	0.495	0.500	550,482	0.639	0.480	549,284	0.625	0.484

Notes: 1. For dichotomous variables such as males, the mean values represent the proportion of home owners that are males. 2. Education qualifications represent highest educational attainment.

3.3 Housing assistance: the impact of demographic change

By ageing the HILDA data—assuming that all financial magnitudes are constant in real terms and holding behaviour (choices) constant—we are able to estimate, using AHURI-3M, the effect of *demographic change* on the future profile of our main housing assistance programs.[29] This approach isolates the impact that anticipated demographic change will have on housing assistance payments, holding housing tenure outcomes constant. In this section we consider the impact of demographic change on CRA and public housing, while the following section looks at the combined impact of demographic *and* tenure change on these forms of housing assistance. Section 3.5 deals with the asset test concession that is granted to home owners eligible for income support. Finally (in Section 3.6), we address Commonwealth tax subsidies for home owners. The parameters (e.g. income thresholds, rent thresholds) governing eligibility for and entitlements under these housing assistance, tax subsidy and asset test concession programs are also assumed to be constant in real terms.

Table 6 shows the number of private rental tenants (income units) estimated to be eligible for CRA in 2011, 2021 and 2031, and the estimated budget cost (calculated with AHURI-3M). The number of tenants expected to enrol in the CRA program increases from 952,000 income units in 2011[30] to 1.2 million income units in 2031; an increase of 30 per cent[31]. This growth is slower than the growth in the size of the tenure group, which is forecast to increase by 39 per cent. As a result, those eligible for CRA will decline as a share of all private renters (from 31.7% in 2011 to 29.8% in 2031). A key factor here is contraction in the share of private rental households with dependent children present. For example, Table 6 reveals that the number of CRA-eligible income units living as couples with dependent children increases by only 16 per cent (from 266,000 to 308,000) over the time frame 2011–31, while the total number of eligible tenants in private rental housing is forecast to increase by 31 per cent. Middle-income couple households with dependent children that are eligible for Family Tax Benefit (FTB) can also be eligible for CRA, but their declining demographic importance will help to curb growth in the CRA program.

Nevertheless, growth in the number of CRA recipients drives an increase in the real value of aggregate CRA payments, and hence the budget cost of the program. We estimate that CRA payments totalled $2.8 billion in 2011. At constant 2011 prices, we anticipate demographically driven growth to $3.6 billion in 2031; a 28.7 per cent increase in real terms, equivalent to an average annual real increase of 1.4 per cent. Table 6 offers a breakdown of the figures by age group and household type. Younger age groups typically account for a declining share of the budget, as would be expected given an ageing population. For example, the 25–34 years group's share of all CRA payments declines from 29.2 per cent in 2011 to 26.2 per cent in 2031. Not surprisingly, those tenants who have reached pension age (65 years) account for an increasing share of the group (from 14.3% to 20.6%)—this also fuels an increase in single-person households' share of CRA payments (from 31.8% to 34.2%).

[29] Details on methodology can be found in Chapter 2.

[30] The Department of Families, Housing, Community Services and Indigenous Affairs *Income support customers: a statistical overview 2011* (p.80) reports that 1.14 million income units received CRA payments in 2011. On an income unit basis, our estimate (952,000) is only marginally less than this.

[31] In the period 2008–09 to 2012–13, real expenditure on the CRA program increased by 25 per cent and the number eligible increased by 30 per cent (SCRGSP 2014), so this forecast implies a considerably slower rate of increase in the number eligible for CRA. This will in part, our conservative assumption that real rent levels remain constant and that incomes increase in line with nominal rents. Another factor is change in the of tenants, as detailed below.

Table 6: Estimated counts of CRA recipients and actual/projected amount received, by household type and age, 2011, 2021, 2031

	2011			2021			2031		
	Mean annual amount received ($)	Budget cost ($000,000s)	No. of CRA recipients (000s)	Mean annual amount received ($)	Budget cost ($000,000s)	No. of CRA recipients (000s)	Mean annual amount received ($)	Budget cost ($000,000s)	No. of income unit recipients (000s)
Household type									
Couple with dependents	3,554	945.8	266.2	3,555	1,007.7	283.4	3,555	1,093.7	307.6
Couple, no dependents	2,388	193.2	80.9	2,432	244.4	100.5	2,451	294.1	120.0
Sole parent	3,301	744.8	225.6	3,314	868.9	262.2	3,313	949.5	286.6
Singles	2,309	876.7	379.7	2,342	1,022.5	436.5	2,338	1,216.1	520.1
Total	2,899	2,760.6	952.4	2,903	3,143.5	1,082.7	2,879	3,553.5	1,234.3
Age range									
15–24	2,546	311.8	122.5	2,575	312.8	121.5	2,578	346.6	134.4
25–34	3,318	807.8	243.5	3,344	897.6	268.5	3,346	930.0	278.0
35–44	3,336	671.8	201.4	3,339	753.4	225.6	3,337	858.4	257.2
45–54	2,724	368.2	135.2	2,741	400.7	146.2	2,750	441.2	160.5
55–64	2,391	206.4	86.4	2,414	237.7	98.5	2,414	253.8	105.1
65 and over	2,412	394.6	163.6	2,433	541.3	222.5	2,419	723.5	299.1
All persons	2,899	2,760.6	952.4	2,903	3,143.5	1,082.7	2,879	3,553.5	1,234.3

Notes: 1. The unit of analysis is the income unit. 2. Amount received/budget cost is *actual* for 2011 and *projected* for 2021 and 2031. 3. HILDA cross-sectional population weights have been adjusted to incorporate ABS's population projections for years 2021 and 2031. 4. The mean annual amount received has been calculated by dividing aggregate (summed across all income units) CRA payments by the number of income units. 5. Age group breakdowns were estimated by randomly selecting an adult from each income unit and assigning the income unit's CRA payment to that adult.

Source: Authors' own calculations using AHURI-3M and wave 11 of the HILDA Responding Person files, release 11.

Table 7 presents the imputed annual budget cost of public housing in 2011, 2021 and 2031. The imputed budget cost is arrived at using our estimate of the tenant rent rebate—that is, the difference between the market rent of the property occupied by a tenant and the concessionary rent. The latter is typically set by state housing authorities at 25 per cent of tenants' assessable income. We have calculated these costs using state-specific definitions of assessable income. Market rents have been imputed using the predictions from a hedonic rent model estimated from rents in the private rental market (see Chapter 2 for details). Our definition of the imputed budget cost of the rent rebate is equivalent to the revenue foregone as a consequence of charging concessionary rents rather than market rents.

It is worth noting that the demographic forecasts project an increase in the number of (adult) persons living in each of the housing tenures. This arises because in this section we are holding everything constant except demographic change. The ceteris paribus assumption includes (for the moment) tenure outcomes. So, if a person with particular demographic characteristics (e.g. age, household type) is observed in 2011 to be living in public housing, and the ABS demographic forecasts indicate that a person with such demographic characteristics will grow in number, then we assume the increase in such people is accommodated in public housing. Table 7 shows that, using the HILDA population weights, in 2011 there are 228,000 households receiving a rent rebate while living in public housing.[32] This number would be expected to increase by 44 per cent to 328,000 if state housing authorities increased their housing stock to match growth in the demographic groups they accommodated in 2011.

The effective budget cost of the rent rebates in 2011 is estimated to be $1.1 billion, which is 41 per cent of the total amount spent on CRA payments—despite private rental housing accounting for over 20 per cent of all adult Australians, while public housing's share is roughly 4 per cent. The estimate of revenues foregone in public housing in 2031 is $1.7 billion at constant prices; a 45 per cent real increase. Thus the *demographically driven* growth in subsidies to public housing tenants is anticipated to outstrip the growth in subsidies provided through the CRA program. The age and household type variables in Table 7 help to explain what is going on here. In 2011, public housing tenants who have reached 65 years of age already account for over one-third (37%) of all tenants. Explosive growth in this age group over the next 20 years is expected to lead to an 82 per cent increase in over-65s in public housing, taking their share of all tenants to 47 per cent. Their share of the total imputed value of rent rebates (budget cost) in the base year 2011 (38%) and the final year of the forecast period 2031 (48%) is even higher, because relatively deep subsidies are provided on the properties occupied by the elderly. In contrast, couple families with children are predicted to become an increasingly uncommon presence in public housing, shrinking from 5.7 per cent of all tenants in 2011 to 4.2 per cent in 2031.

[32] Note that this is less than the total number of households in public housing (321,000)—according to our calculations, some 29 per cent of public housing tenants were not receiving a rent rebate in 2011.

Table 7: Estimated counts of public housing tenants and amount of rental rebate received, by household type and age, 2011, 2021, 2031

	2011			2021			2031		
	Mean annual amount received ($)	Total value of rent rebate ($000,000s)	No. of public housing tenants receiving a rent rebate (000s)	Mean annual amount received ($)	Total value of rent rebate ($000,000s)	No. of public housing tenants receiving a rent rebate (000s)	Mean annual amount received ($)	Total value of rent rebate ($000,000s)	No. of public housing tenants receiving a rent rebate (000s)
Household type									
Couple with dependents	4,898	63.1	12.9	4,925	64.0	13.0	4,963	68.0	13.7
Couple, no dependents	6,035	253.3	42.0	6,073	331.2	54.5	6,208	408.4	65.8
Sole parent	5,715	212.1	37.1	5,731	245.4	42.8	5,664	263.3	46.5
Single	4,498	612.0	136.1	4,529	775.5	171.2	4,541	917.2	202.0
Total	5,002	1,140.6	228.1	5,029	1,416.1	281.6	5,052	1,656.8	327.9
Age range									
15–24	5,469	28.5	5.1	5,523	27.6	5.0	5,592	30.3	5.4
25–34	4,883	120.0	24.6	4,937	141.0	28.6	4,952	145.2	29.3
35–44	4,697	142.0	30.2	4,743	160.7	33.9	4,747	181.9	38.3
45–54	5,487	217.4	39.6	5,503	240.4	43.7	5,512	259.3	47.0
55–64	4,580	201.4	44.0	4,607	237.7	51.6	4,614	249.8	54.1
65 and over	5,109	431.8	84.5	5,121	608.6	118.9	5,142	790.3	153.7
All persons	5,002	1,140.6	228.1	5,029	1,416.1	281.6	5,052	1,656.8	327.9

Notes: 1. Rent rebates received are based on 2006 public housing rent criteria. 2. HILDA cross-sectional population weights are used to estimate population-weighted amounts/counts. 3. The mean annual amount received has been calculated by dividing aggregate (summed across all income units) rent rebates by the number of households. 4. Count only includes those public housing tenants (households) whose imputed market rents are higher than their concessional rents. 5. Age group breakdowns were estimated by randomly selecting an adult from each income unit and assigning the income unit's CRA payment to that adult.

Source: Authors' own calculations using AHURI-3M and waves 6 (for state public housing parameters only) and 11 of the HILDA Responding Person files, release 11.

3.4 Housing assistance: the combined impact of demographic and tenure change

We now combine two sets of forecasts: the ABS-sourced demographic projections and the predicted tenure outcomes as described in Section 3.2. The demographically driven estimates presented in the previous section offer insights into how demographic change will drive shifts in the pattern and level of housing assistance in the future if our housing system were to accommodate population change within the same tenure structure as in 2011. However, this scenario could be regarded as unrealistic. Therefore, in this section we make some alternative assumptions about tenure structure. Firstly, we suppose that state housing authorities continue to house the same number of (adult) tenants as in 2011. Secondly, we apply our forecast changes in the future rates of home ownership.

Commonwealth Rent Assistance

We first consider the predicted number of CRA recipients over the time frame, and the budget cost of payments to these CRA clients. Table 8 reports an increase in the anticipated number of CRA clients that exceeds the increase that demographic change alone is predicted to cause. Table 8 reveals that the number of income units is expected to increase to 1.2 million in 2021 and then to 1.5 million in 2031; an increase of roughly 600,000 income units above the 2011 level (952,000), which is equivalent to a 61 per cent increase over the time frame (2011–31). Demographic change alone is expected to increase client enrolments by 30 percentage points, so forecast changes in rates of home ownership add another 31 percentage points to growth in CRA program enrolments. The real budget cost (CRA payments at constant prices) also rises from $2.8 billion in 2011 to $4.5 billion in 2031; a 62 per cent addition to real budget expenditures that represents an average 3.1 per cent per annum increase. As noted in Section 3.3, 28.7 percentage points of this 62 per cent increase is due to demographic change.

Breakdowns by household type and age range are also reported in Table 8. Our projections assume a sharp fall in home ownership rates in the middle age ranges, with home ownership increasingly out of reach for those suffering marital disruption, as well as singles who have never married. This is reflected in our breakdowns, which reveal soaring CRA enrolments among singles. In 2011, 380,000 singles were enrolled in CRA. We forecast a 61 per cent increase by 2021, and predict that by 2031 the number of single clients will have more than doubled (to 799,000).[33] In the age ranges 45–54 and 55–64 years, we anticipate increases in the number of CRA clients of 65 per cent and 116 per cent respectively.

In short, we expect a combination of demographic change and falling rates of home ownership among middle age cohorts to increase real CRA payments by 62 per cent over the 20-year time frame. The relevant demographic change driving the increases in real budget costs is not simply ageing; there are also important increases in singles and (relatedly) in the population numbers that are the product of serious biographical disruption. The falling rates of home ownership that are predicted among those in their middle years are concentrated on singles, particularly the separated and divorced. These individuals with their relatively low household disposable incomes, will find home ownership increasingly out of reach and ,will help grow the number of CRA clients over the forecast time frame.

[33] This increase in single clients also reflects demographic change, and a growing number of single age pensioners in particular.

Table 8: Estimated counts of CRA recipients and projected amount received, by household type and age, 2021 and 2031, taking into account Yates' tenure projections

	2021			2031		
	Mean annual amount received ($)	**Budget cost ($000,000s)**	**No. of CRA recipients (000s)**	**Mean annual amount received ($)**	**Budget cost ($000,000s)**	**No. of CRA recipients (000s)**
Household type						
Couple with dependents	3,539	921.4	260.4	3,524	1,056.4	299.8
Couple, no dependents	2,232	110.9	49.7	2,203	137.6	62.5
Sole parent	3,404	1,083.5	318.3	3,393	1,260.3	371.4
Single	2,511	1,535.5	611.6	2,530	2,020.8	798.9
Total	2,945	3,651.4	1,240.0	2,920	4,475.4	1,532.6
Age range						
15–24	2,618	264.3	100.9	2,632	300.1	114.0
25–34	3,368	893.4	265.3	3,370	946.5	280.8
35–44	3,328	803.2	241.3	3,335	964.6	289.2
45–54	2,853	507.9	178.0	2,859	636.2	222.5
55–64	2,638	395.9	150.1	2,602	486.0	186.8
65 and over	2,585	786.8	304.3	2,601	1,142.0	439.2
All persons	2,945	3,651.4	1,240.0	2,920	4,475.4	1,532.6

Note: See table notes for Table 6.

Source: Authors' own calculations using AHURI-3M and wave 11 of the HILDA Responding Person files, Release 11.

Public housing

We now address public housing. Assuming that public housing would continue to accommodate the demographic groups that it served in 2011, we forecast an increase in the real imputed budget cost from $1.1 billion to $1.7 billion. On replacing this assumption with a more realistic scenario—in which the number of public housing tenants remains unchanged at approximately 550,000—we find that the real imputed budget cost increases from $1.1 billion to $1.5 billion. While the number of tenants is unchanged in this case, there is change in the composition of tenants in public housing. Our method rations public housing in 2031 (and 2021) to those who our modelling suggests have the highest probability of residing in public housing (see Section 2.2 for details). On comparing the number of tenants receiving a rent rebate under the two scenarios, we find that in the demographically driven scenario there is rapid growth in elderly tenants (65 years and over) as well as singles. Under the 'rationing' scenario (assuming a fixed number of public housing tenants), the number of elderly tenants who manage to retain a tenancy and receive a rent rebate slightly declines. As this group tends to receive relatively deep subsidies (see Table 9), this helps curb the real imputed budget costs. In addition, there are sharp declines in the incidence of childless couples in public housing. On the other hand, our projections anticipate an increase in sole parents over the forecasting period; this is perhaps why the age ranges 25–34 years and 35–44 years are the only two age groups expected to show a rise in the number of tenants receiving a rebate under the 'rationing' (as opposed to demographically driven) scenario.

Table 9: Population estimated count of public housing tenants and projected amount of rental rebate received, by household type and age, 2021 and 2031, taking into account Yates' tenure projections

	2021			2031		
	Mean annual amount received ($)	**Budget cost ($000,000s)**	**Public housing tenants receiving a rent rebate (000s)**	**Mean annual amount received ($)**	**Budget cost ($000,000s)**	**Public housing tenants receiving a rent rebate (000s)**
Household type						
Couple with dependents	3,844	55.9	14.5	3,818	55.5	14.5
Couple, no dependents	3,691	30.9	8.4	3,796	33.7	8.9
Sole parent	5,043	286.9	56.9	5,056	301.7	59.7
Single	5,024	1,146.4	228.2	5,080	1,137.6	223.9
Total	4,936	1,520.0	308.0	4,979	1,528.5	307.0
Age range						
15–24	5,217	68.2	13.1	4,999	65.1	13.0
25–34	4,574	175.6	38.4	4,609	179.7	39.0
35–44	4,745	182.3	38.4	4,810	187.8	39.0
45–54	4,895	223.7	45.7	5,210	232.0	44.5
55–64	4,334	234.7	54.2	4,461	241.4	54.1
65 and over	5,376	635.5	118.2	5,306	622.5	117.3
All persons	4,936	1,520.0	308.0	4,979	1,528.5	307.0

Note: See table notes for Table 7.

Source: Authors' own calculations using AHURI-3M and waves 6 (for state public housing parameters only) and 11 of the HILDA Responding Person files, Release 11.

3.5 The asset test concession: budget cost under demographic and tenure change scenarios

Home owners are given preferential treatment under asset tests used to determine eligibility and entitlements to ISPs, the most important of which is the age pension.[34] The asset test concession arises because the value of an owner-occupier's home is not included alongside other assets assessable under the asset test. The preferential treatment of home owners is partly offset by the owner-occupier asset threshold (below which ISP entitlements are unaffected) being set lower than that applied to rental tenants[35] . As at July 2016, the asset threshold for home owner couples (singles) was $296,000 ($209,000), while the threshold for non-home-owner couples (singles) was $448,000 ($360,500) (DHS 2016). Even though partly offset by these differential thresholds, the asset test concession increases government payments on ISPs, and we can expect this budget cost to become increasingly important as the Australian population ages.

We estimate the value of the asset test concession by using a hypothetical 'neutral' asset test, in which the unencumbered value of owner-occupied housing (housing equity) is included in assessable assets, while the owner-occupier asset threshold is raised to the same level as that applicable to non-home-owners. The cost of the asset test concession is defined as equal to the difference between entitlement to income support (e.g. fortnightly age pension payment) under the current asset test, and the entitlement calculated using the neutral asset test described above. We aggregate across all affected individuals, as well as the full range of pensions and allowances subject to asset tests, and apply relevant population weights to obtain our current and forward budget cost estimates (see Section 2.2.3 for more details).

Table 10 illustrates the situation in our base year (2011), with all financial measures presented on an income unit basis. In that year, 2.4 million home owners were eligible for pensions, allowances and other ISPs. We estimate that 730,000 (nearly one in three home owning ISP clients) would be affected if a tenure-neutral asset test regime were introduced. Those home owners eligible for pensions are most affected, especially older home owners eligible for age pensions. In 2011, clients of pension programs account for 93 per cent of all those expected to be impacted; and the roughly 681,000 pensioners with lower pensions as a result of the neutral regime represent 50 per cent of all pension recipients. The average fall in their pension is predicted to be $5,850 per annum, or $113 per week.[36] The budget cost of this concession (equal to the government saving under a tenure-neutral asset test scenario) with respect to pensions is therefore large, at $5.2 billion in 2011. To put this in context, that amount exceeds the total actual cost of CRA payments made in in 2011 ($3.9 billion). A smaller proportion of home owner allowance recipients and other ISP recipients are affected by a neutral asset test (37% of allowance recipients; 6.4% of other ISP clients). This is because most home owning clients of these programs are younger and therefore have lower amounts of equity stored in their homes. The concession's budget cost for these groups is therefore much lower at $0.6 billion.

[34] Not all income support programs are subject to an asset test—for example, Family Tax Benefit.

[35] Wood, Stewart et al. (2010) present estimates of asset test concessions as of 2006. Their estimates are not directly comparable with those reported here, because focus in Wood, Stewart et al.'s report was the age pension, while in the present analyses the scope of investigation encompasses all pension programs (see table notes for Table 10).

[36] These averages are conditional on receiving a pension. In Wood, Stewart et al. (2010), the reported means are unconditional.

Table 10: Impact of changes to asset test regime on home owners who receive ISPs, 2011

	Pensions	Allowances	Other ISP	All ISPs
Number receiving ISP under current regime (000s)	1,377.2	77.0	2,365.4	2,385.8
Number of ISP recipients whose payments would be reduced *if the asset test regime were made tenure neutral* (000s)	680.9	28.3	151.0	730.3
Median [mean] reduction in annual payments to ISP recipients affected by tenure-neutral regime ($)	7,630.0 [5,850.0]	11,072.9 [11,199.6]	1,889.3 [156.0]	7,932.9 [6,185.8]
Total saving to government ($billions)	5.20	0.31	0.29	5.79

Notes: 1. The unit of analysis is the income unit. 2. For 'Pensions', the most important pension is the Age Pension, but also included here are other pensions, such as the Disability Support Pension, Carer Payment, Department of Veteran Affairs Service Pension, and Wife Pension. 3. 'Allowances' include Newstart Allowance, Sickness Allowance, Mature Age Allowance, Partner Allowance, Widow Allowance and Special Benefit. 4. 'Other ISP' includes Youth Allowance, Austudy, Abstudy, Parenting Payment, minor ISPs (e.g. Mobility Allowance, Double Orphan Pension, Community Development Employment Program), supplementary ISPs that are attached to pensions/allowances (e.g. CRA, Pharmaceutical Allowance), Department of Veterans' Affairs ISPs (e.g. Income Support Supplement, DVA Disability Pension), FTB, and non-means-tested allowances (e.g. Carer Allowance).

Source: Authors' own calculations from the 2011 HILDA Survey.

Our forward budget cost estimates assume that all economic and policy parameters remain unchanged over the forecast period (2011–31), and hence all dollar values are at constant 2011 prices.[37] Furthermore, the parameters (e.g. eligible age threshold for the age pension) governing eligibility for and entitlements under ISPs are also assumed to be fixed. Table 11 lists forward estimates of the asset concession's budget cost in 2021 and 2031, taking into account forecast demographic change but holding tenure choices constant. Pensioners are predicted to again account for more than 9 in every 10 owner-occupier clients of ISPs affected by the application of tenure-neutral asset tests in 2021 (94%) and 2031 (95%). We therefore focus on this group of ISP clients.

By 2021 (see Table11 panel a), there is a forecast increase of more than one-third (34.5%) in the number of pensioners, largely as a result of population ageing and therefore a surge in the number of age pensioners. One in two pensioners (from all pension programs) are expected to be affected by a tenure-neutral asset test, and there is significant loss for those affected (roughly $7,656 per annum on average). Nevertheless, the budget savings from lower pension payments if the asset concession were removed is estimated to be $7.1 billion, which is 36.9 per cent greater than estimated for 2011. Thus, over a decade (2011–21), the budget cost of the asset concession is expected to grow by an average 3.7 per cent per annum. The overall budget cost of the concession under all ISPs reaches $7.8 billion in 2021.

By 2031 (see Table 11, panel b), the number of individuals eligible to receive pensions soars to 2.4 million—a 71 per cent increase on their numbers in 2011. The share of individuals affected by a neutral asset test edges up to 51.5 per cent, which is 2.0 percentage points higher than in 2011. We now predict an average fall in pension payments of $6,045 per annum (among those affected)—a 3.3 per cent increase on the 2011 figure. The government savings from lower pension payments that result if a tenure-neutral asset test is applied in 2031

[37] For further details on the ceteris paribus assumptions, see Chapter 2. In the present context, it is important to bear in mind that forthcoming changes to the Age Pension's age threshold, and the taper rates at which Age Pension is withdrawn when the lower asset threshold is reached, are not taken into account.

amount to $9.3 billion—fully 79 per cent higher in real terms than in 2011 ($5.2 billion). Considering all ISPs, the asset test concession is thus estimated to cost the 2031 budget $10.2 billion (at constant 2011 prices)—this is equivalent to 0.7 per cent of Australia's GDP in 2011 ($1,401 billion).[38]

Table 11: Predicted impact of changes to asset test regime on home owners who receive ISPs, taking into account projected demographic changes but assuming unchanged tenure, 2021 and 2031

(a) 2021

	Pension	Allowance	Other ISP	All ISPs
Number receiving ISP under current regime (000s)	1,852.1	89.4	2,927.5	2,950.7
Number of ISP recipients whose payments would be reduced *if the asset test regime were made tenure neutral* (000s)	929.7	34.3	199.4	988.6
Median [mean] reduction in annual payments to ISP recipients affected by tenure-neutral regime ($)	7,656.1 [5,850.0]	11,041.7 [11,146.2]	1,698.4 [156.0]	7,924.9 [6,185.8]
Total saving to government ($billions)	7.12	0.38	0.34	7.83

(b) 2031

	Pension	Allowance	Other ISP	All ISPs
Number receiving ISP under current regime (000s)	2,358.6	96.5	3,566.9	3,591.8
Number of ISP recipients whose payments would be reduced *if the asset test regime were made tenure neutral* (000s)	1,213.5	37.3	253.9	1,281.9
Median [mean] reduction in payments to ISP recipients affected by tenure-neutral regime ($)	7,691.9 [6,045.0]	11,050.0 [11,146.2]	1,608.7 [156.0]	7,920.9 [6,214.2]
Total saving to government ($ billions)	9.33	0.41	0.41	10.15

Note: 1. See table notes for Table 10.

Source: Authors' own calculations from the 2011 HILDA Survey.

We now examine the combined effect of demographic and tenure change (see Table 12). Forward estimates of budget costs are a little more complex to calculate under this scenario, because our method of generating future tenure profiles involves reassigning some 2011 owner-occupiers (tenants) as tenants (owner-occupiers) in 2021 and 2031. Those 2011 tenants that are 'tagged' as owner-occupiers in 2021 or 2031 require imputed outstanding mortgage and house value estimates in order to apply the asset tests.[39] We assume that private renters choose a level of housing services in owner-occupation that is equivalent to that demanded as tenants. The market rent they paid in 2011 is then capitalised using a cap

[38] The GDP figure is sourced from ABS (2012a).

[39] Those 2011 owner-occupiers that continue to be designated as owner-occupiers in 2021/2031 have their future asset test applied assuming that their 2011 house value and mortgage debt remain fixed in real terms.

(discount) rate of 8 per cent (see Section 6.2 below on choice of discount rate). Public housing tenants (and those living rent free) do not pay market rents, so their capitalised value cannot be used to represent house value. We instead use an estimated hedonic rent regression to predict the market rent of the property occupied as a public housing tenant.[40] The predicted market rent is then capitalised using the same 8 per cent discount rate. Mortgage debt is imputed by assigning a value equal to the population-weighted mean outstanding debt of other mortgagors in the same age bracket[41] and location[42].

The net impact of the projected *tenure distribution change* is to lower the forecast number of home owners that are eligible to receive ISPs, *as compared to the projected number under the demographic-change-only forecasts*. Consider Table 12 where forward budget estimates are listed for 2021 and 2031. In 2021, the number of eligible pensioners is lowered from 1.85 million (income units) under the demographic-change-only projections, to 1.70 million under the combined tenure and demographic change forecasts. In 2031, there is a fall from 2.36 million to 2.17 million. With fewer eligible home owners, a marginally lower fraction of whom are affected by a neutral asset test regime, there is a substantially smaller number 'hit' by the application of a tenure-neutral asset test. In 2031, for example, 1.21 million home owners would have a reduced pension payment under a tenure-neutral asset test, when taking into account our demographic change forecasts. But under the combined demographic and tenure change forecasts, less than a million (936,000) would have their payments reduced. Thus, the budget savings are not as large. Taking savings under all ISPs into account, the payment costs under these programs are reduced by $6.1 billion in 2021 and $8 billion in 2031. This is still well above the reduction in outlays that could have been secured back in 2011 ($5.8 billion).

[40] The hedonic rent regression expresses the log of annual rent as a function of personal and property characteristics. All continuous explanatory variables on the right hand side of the equation (e.g. income) are expressed in log form.

[41] We use the same age brackets as elsewhere in this report: less than 35 years, 35–44 years, 45–54 years, 55–64 years, and 65 years and over. No age breakdown is conducted for the Northern Territory (NT) because sample numbers are too few.

[42] We have employed a state capital/rest-of-state breakdown for all states other than Tasmania. No such breakdown is applicable in the case of the Australian Capital Territory (ACT) and Northern Territory.

Table 12: Predicted impact of changes to asset test regime on home owners who receive ISPs, taking into account projected demographic and tenure changes, 2021 and 2031

(a) 2021

	Pension	Allowance	Other ISP	All ISPs
Number receiving ISP under current regime (000s)	1,703.2	62.6	2,798.0	2,806.0
Number of ISP recipients whose payments would be reduced *if the asset test regime were made tenure neutral* (000s)	707.4	17.6	155.6	735.8
Median [mean] reduction in annual payments to ISP recipients affected by tenure-neutral regime ($)	8,159.1 [6,328.5]	9,816.8 [11,146.2]	1,001.7 [156.0]	8,290.2 [6,484.5]
Total saving to government ($ billions)	5.77	0.17	0.16	6.10

(b) 2031

	Pension	Allowance	Other ISP	All ISPs
Number receiving ISP under current regime (000s)	2,169.3	56.4	3,345.9	3,352.3
Number of ISP recipients whose payments would be reduced *if the asset test regime were made tenure neutral* (000s)	936.2	17.3	195.9	962.7
Median [mean] reduction in payments to ISP recipients affected by tenure-neutral regime ($)	8,172.2 [6,391.9]	9,886.1 [11,146.2]	837.8 [156.0]	8,295.2 [6,484.5]
Total saving to government ($billions)	7.65	0.17	0.16	7.99

Note: See table notes for Table 10.

3.6 Tax subsidies for home owners: budget cost under demographic and tenure change scenarios

As outlined in Chapter 2, we adopt a tenure-neutral method that measures home owners' user cost of capital under both current tax arrangements and neutral tax arrangements, where owners would be subject to the same tax arrangements as an investor (landlord). User cost is a more accurate measure of owners' after-tax economic costs of holding owner-occupied housing than a financial cost measure, and permits a conceptually sound calculation of the way taxation benefits home owners.[43] To estimate the tax subsidies received by home owners, we calculate the difference between user costs under the current and neutral tax arrangements. This is a standard approach in the overseas literature and has also been used before in Australian studies.[44] The formulas used in our calculations, and the key parameter values, are set out in Appendix 1; a brief overview of the approach is presented here.

[43] The home owner's user cost of capital is 'the price which an owner-occupier must pay to obtain a unit of services, while owning a unit of stock' (Chinloy 1991: 516).

[44] The conceptual framework in an Australian context is developed in Wood (2003). He shows that the difference in user cost measure is a positive function of the interest rate (used to determine imputed rents), the marginal tax rate of the home owner and the rate of house price appreciation (Wood 2003: 114). Other Australian studies that use this approach include Bourassa and Hendershott (1992; 1994) and Wood, Stewart et al. (2010).

To define a tenure-neutral regime for home owners, we follow Poterba and Sinai's (2008) approach for calculating home owners' user costs of capital. We therefore include gross imputed rental income in taxable income, but allow deduction for interest payments, property taxes, maintenance and depreciation. However, while Poterba and Sinai assume the current tax treatment of capital gains on owner-occupied housing remains unchanged, we apply the CGT treatment applicable to Australian investors, which taxes half the capital gain when realised. Home owners typically benefit from tax subsidies as we have defined them. The exception is home buyers who have highly leveraged their purchases of owner-occupied housing: these home owners can have higher user costs under the current tax treatment of owners than if they were taxed in the same way as landlords. This is because home buyers' mortgage interest payments cannot be deducted from taxable income under the current tax provisions, while landlords can deduct their mortgage interest payments without limit.

The tax subsidy estimates are calculated on an income unit basis and key findings are presented in Table 13. The typical Australian home owner receives mean housing tax subsidies of $2,930 per annum (at 2011 prices), which is 3.3 per cent of gross income. This lowers the mean user cost of owner-occupied housing from 5.8 per cent if owner-occupiers were taxed in the same way as landlords, to 5.4 per cent under the present arrangements applying to owner-occupiers.[45]

Strong distributional patterns by age and income are evident in Table 13. For young Australian home owners under the age of 35, there is in fact a tax *penalty*, which is on average equal to $2,174 per annum, amounting to 1.9 per cent of gross income. This is a stage in the home owner housing life cycle when buyers are striving to move away from the edges of ownership, yet the present tax system effectively makes it more difficult for young home owners to establish themselves in mainstream home ownership (Wood, Smith et al. 2013). On the other hand, housing tax subsidies extend generous support to older home owners, and especially the over-65s. Home owners who have reached pensionable age receive an average $ 4,637 per annum in tax subsidies, which is more than 10 per cent of gross income. These life cycle patterns to tax subsidies emphasise how home ownership societies like Australia help to support retirement incomes policy. Yates and Bradbury (2010) have emphasised how home ownership is a pillar supporting a government age pension program that is less generous than that in other high-income OECD[46] countries.

These estimates illustrate the importance of home owner tax subsidies in this respect. The redistributive role across the life cycle also helps to mask the relationship of tax subsidies with income. Table 13 shows that population wide there is no systematic tendency for the size of tax subsidies to increase with income. The reason is that older home owners are often outright owners (or have very large equity holdings), yet relatively low incomes. On the other hand, middle-aged and younger home owners tend to have higher incomes than seniors, but their indebtedness depresses the amount of support they receive from tax subsidies (see bottom panel of Table 13). However, if we hold age constant, we can see a strong positive relationship between the level of tax subsidy and income. Consider the 45–54 years age range, for example: in the lowest income quintile, owners in this age range benefit from average subsidies of $1,355 per annum, but this increases to roughly four times those levels ($5,228 per annum) in the highest income quintile. Similar patterns are repeated in other age ranges.

[45] In 2006 base-year calculations for the Henry Tax Review (Wood, Stewart et al. 2010: Table 4.3), the same approach resulted in a higher estimate of the mean tax subsidy ($3,891) and a larger reduction in user cost from 6.6 per cent to 5.9 per cent. The lower current (2011) estimates are the result of a lower 10-year treasury bond rate, which is used to measure the net imputed rents of owner-occupiers, and an increase in LVRs in all age groups. Despite an ageing population, that depresses indebtedness in the overall population; the mean LVR increased from 22 per cent in 2006 to 23.3 per cent in 2011. Among home owners less than 35 years of age, this short five-year period witnessed a sharp increase in mean LVRs, from 55.3 per cent to 60.7 per cent.

[46] Organization for Economic Cooperation and Development.

Table 13: Mean annual tax subsidy of home owners, by age and gross income quintile, 2011–12

Age (years)	Gross income quintile of home owners ($Y'000)					All
	Y<=28	28<Y<=54	54<Y<=90	90<Y<=134	Y>134	
			Dollar value ($)			
Under 35	3,268.2	-118.2	-1,398.1	-2,539.5	-3,791.6	-2,173.7
35–44	596.7	1,153.4	489.9	262.4	1,299.8	736.2
45–54	1,354.9	2,437.1	2,393.2	3,596.4	5,228.9	3,454.6
55–64	2,099.7	3,364.9	5,346.8	6,164.3	9,059.0	4,917.8
65 and over	2,801.0	4,386.7	7,669.0	11,908.5	13,731.5	4,637.3
All	2,424.5	3,297.7	2,917.3	2,342.4	3,693.8	2,930.1
			Proportion of income (%)[#]			
Under 35	24.2	-0.3	-1.9	-2.3	-2.0	-1.9
35–44	4.4	2.7	0.7	0.2	0.6	0.6
45–54	10.1	6.0	3.3	3.3	2.6	3.1
55–64	18.9	8.4	7.6	5.7	4.5	6.3
65 and over	13.4	11.5	11.4	11.0	6.1	10.8
All	13.8	8.3	4.1	2.1	1.8	3.3
			LVR (%)			
Under 35	33.0	54.0	59.8	64.7	61.9	60.7
35–44	26.7	37.5	44.9	44.4	39.9	41.7
45–54	20.5	21.9	28.9	26.9	25.9	25.9
55–64	7.8	9.6	11.8	15.4	13.2	11.3
65 and over	1.8	1.4	3.5	4.0	5.7	2.1
All	6.3	12.8	29.0	36.0	32.7	23.3
			Sample size			
25–34	14	70	149	201	162	596
35–44	43	91	226	295	290	945
45–54	95	147	272	293	336	1,143
55–64	236	225	246	191	162	1,060
65 and over	651	501	155	52	52	1,411
All	1,039	1,034	1,048	1,032	1,002	5,155

Notes: 1. Age group breakdowns were estimated by randomly selecting an adult from each income unit and assigning the income unit's tax subsidy to that adult.

[#] Mean tax subsidy divided by mean gross income and expressed as a percentage.

Source: Authors' own calculations using AHURI-3M and wave 11 of the HILDA Responding Person files, Release 11.

In Table 14 we show forward estimates of the aggregate size of home owner tax subsidies that are generated given our demographic projections, but holding tenure constant. As in earlier projection exercises, the same ceteris paribus conditions are assumed with respect to

financial variables, policy parameters and behaviour (e.g. labour supply).[47] The aggregate value of home owner tax subsidies is expected to grow from $15.3 billion in 2011 to $18.8 billion in 2021 and then to $22.2 billion in 2031, which is a 45 per cent real increase over 20 years. This comfortably exceeds the 29 per cent increase in CRA payments (to $3.6 billion) over the same period, but is exactly the same percentage increase forecast for the total value of public housing rent rebates (which are predicted to rise to $1.7 billion in 2031). However, it falls short of the 74 per cent increase (to $10.1 billion) in the aggregate value of asset test concessions over the same period. Taking only demographic changes into account, we therefore anticipate the aggregate value of housing subsidies (including asset test concessions) to be $37.5 billion in 2031 (at constant 2011 prices). All but 14 per cent of these subsidies benefit home owners.

Table 14 offers a breakdown of the tax subsidy forward estimates by living arrangement (household type) and age. Couples with dependents and sole parents lose out to singles and couples with no dependents, who push up their combined share from 76 per cent to 81 per cent of all tax subsidies in 2031. The rising share of these groups is due to population ageing, since dependent children are largely absent in elderly households. The share of the 65 years and over age group soars from 42 per cent in 2011 to 52 per cent in 2031.

Table 14: Annual mean[#] and aggregate tax subsidy received by home owners, taking into account projected demographic changes but assuming unchanged tenure, by household type and age, 2011, 2021, 2013

	2011 (actual)		2021 (projected)		2031 (projected)	
	Mean ($)	**Budget cost ($000,000s)**	**Mean ($)**	**Budget cost ($000,000s)**	**Mean ($)**	**Budget cost ($000,000s)**
All home owners	3,085.3	15,274.6	3,178.2	18,767.1	3,221.1	22,153.4
Household type						
Couple with dependents	2,227.4	3,305.9	2,186.2	3,418.8	2,197.8	3,808.1
Couple, no dependents	4,215.5	7,862.7	4,306.8	10,083.7	4,345.2	11,814.7
Sole parent	1,734.4	373.6	1,731.6	428.6	1,716.1	470.6
Single	2,693.2	3,732.4	2,759.8	4,836.0	2,816.5	6,060.0
Age range						
Under 35	-1,919.4	-880.4	-1,904.2	-982.4	-1,927.8	-1,032.7
35–44	714.4	661.2	608.9	615.3	653.9	753.0
45–54	3,458.4	3,880.9	3,409.8	4,094.7	3,372.9	4,443.7
55–64	4,962.5	5,223.2	4,961.4	5,993.9	4,956.8	6,420.2
65 and over	4,590.6	6,389.8	4,592.8	9,045.6	4,488.2	11,569.2

Notes: 1. HILDA cross-sectional population weights have been adjusted to incorporate ABS's population projections for years 2021 and 2031. 2. Age group breakdowns were estimated by randomly selecting an adult from each income unit and assigning the income unit's tax subsidy to that adult.

[#] Mean tax subsidy divided by mean gross income and expressed as a percentage.

Source: Authors' own calculations using AHURI-3M and wave 11 of the HILDA Responding Person files, Release 11.

The combined effect of demographic and tenure change projections on the value of tax subsidies is shown in Table 15. Under the demographic-only projections, the share of home owners in the Australian population increases from 56.6 per cent in 2011 to 58.8 per cent in

[47] However, house prices are assumed to increase at a rate of 3.5 per cent per annum.

2021 and then 59.9 per cent in 2031. Thus, the changing population profile pushes up the share of home owners, and this is a major factor fuelling the increase in the value of tax subsidies under this scenario. However, when we incorporate expected changes in tenure outcomes, especially the steep falls in rates of home ownership in middle age groups, the projected increase in the aggregate real value of tax subsidies is more modest. Table 15 reveals an increase from $15.3 billion in 2011 to $16.2 billion in 2021 and then $18.8 billion in 2031—these 2031 levels are 23 per cent higher than in 2011. However, the breakdowns by living arrangement and age group are very similar across the time horizon.

Table 15: Annual mean and aggregate tax subsidy received by home owners, taking into account projected demographic and tenure changes, by household type and age, 2021, 2013

	2021		2031	
	Mean ($)	**Budget cost ($000,000s)**	**Mean ($)**	**Budget cost ($000,000s)**
All home owners	3,003.1	16,177.5	3,061.6	18,790.0
Household type				
Couple with dependents	1,938.2	3,386.2	1,962.0	3,735.6
Couple only	3,962.0	10,107.0	4,005.0	11,758.3
Sole parent	1,959.1	273.4	1,473.7	184.4
Single	2,539.9	2,410.9	2,654.2	3,111.6
Age range				
Under 35	-1,604.5	-758.5	-1,608.7	-782.5
35–44	606.3	569.0	672.1	712.1
45–54	3,523.5	3,594.7	3,660.2	3,797.1
55–64	4,780.8	5,216.8	4,890.7	5,409.4
65 and over	4,052.8	7,555.5	3,943.6	9,654.0

Note. See table notes for Table 14.

Source: Authors' own calculations using AHURI-3M and wave 11 of the HILDA Responding Person files, Release 11.

3.7 The future of housing assistance: the need for secure rental housing

The aggregate value of housing subsidies (including CRA, public housing, tax subsidies and asset test concessions) under the combined forecast demographic and tenure changes is expected to be $32.8 billion in 2031, compared with $37.5 billion if only demographic change is considered (at constant 2011 prices). Home owners' share of that aggregate figure remains dominant, at 82 per cent, but the share received by renters under this scenario is higher, at 18 per cent (compared to 14%), because of the growth in private rental tenure. Our research makes clear that growth in private rental tenure poses serious challenges for Commonwealth housing policy. It will be accompanied by a large real increase in CRA payments—a rise of nearly two-thirds according to our projections over the time frame (2011–31)—and this will add to government budget difficulties. Equally importantly, it implies growing numbers of low-income households with personal characteristics that suggest a need for secure rental housing. However, public housing is unlikely to be able to meet these needs, as successive governments of all political persuasions have shown little or no inclination to expand public housing.

Various options have been proposed to meet the mounting need for secure rental housing in Australia. In the next chapter, we explore one of those options: secure leasing. The investigation of a single option is not meant to suggest that that this is a favoured approach relative to others. Rather, the choice to examine the secure leasing scenario reflects national policy priorities and resource constraints.

PART 2: AN ALTERNATIVE HOUSING ASSISTANCE OPTION: SECURE LEASING

4 INTRODUCTION TO SECURE LEASING

Our demographically driven forecasts in Part 1 suggest that there will be significant increases in the number of households in private rental housing in the future, and that this tenure will also accommodate a growing *proportion* of households. Those forecasts document a large increase in the housing assistance budget, especially payments to CRA clients. In Part 2, we explore an option that could ease the budgetary pressures associated with this growing demand for housing assistance, while also offering more secure and affordable housing than is traditionally offered by private rental housing. The search for alternative housing options is pressing, because the private rental housing sector currently accommodates large numbers of low-income households that are vulnerable to spells in unaffordable housing and that also place a high value on stable housing. Private rental housing is ill-equipped to serve both these needs. There is also evidence of possible labour market efficiency gains to be made, given findings reported in Gibb, Stephens et al. (2016: 5), which prompted the authors of that report to conclude that more secure tenancies would improve people's willingness to move in order to take up jobs.

The secure leasing proposal we investigate here seeks to harness the investments made by 'mum and dad' investors in private rental housing for social housing purposes. To achieve this, governments would offer private landlords a rent premium to incentivise their commitment to provide five-year leases for families or single persons *currently on, or eligible to enrol on, state housing authority waiting lists* and belonging to at least one of three groups that typically need secure housing. Landlords would also be expected to raise rents by no more than the increase in the CPI (all goods and services) over the five-year lease term. Secure lease tenants would continue to receive CRA, provided they remain eligible. The central idea is that secure leases offer more stable housing, while CRA and 'light touch' rent regulation (rent capping) concurrently help support affordability goals. From the perspective of government budgetary pressures, it is hoped that savings will be made by avoiding the high capital costs associated with the construction of new public/social housing.

This secure leasing option is by no means an original idea. In the 1990s, the New York City Housing Authority responded to soaring homelessness numbers with an *Emergency Rental Housing Programme* that offered complying private landlords US$2,500 (per family member) to house families who would otherwise be residing in Homeless Shelters (Cragg and O'Flaherty 1999).

A more contemporary example, closer to home, is the *Assisted Rental Pathways Pilot* recently launched by the Government of Western Australia Housing Authority (2016). It aims to support 200 social housing tenants and waitlist applicants in private rental dwellings for a period of up to four years. There is no explicit financial incentive; however, the housing authority guarantees rental payments to landlords for the period of the residential tenancy agreement, by paying the rent owing if the tenant is in arrears. In addition, there are 'make-good provisions'—for example, landlords are paid up to $5,000 for any out-of-pocket expenses incurred as a result of property damage (after the application of the tenancy bond and any insurance proceeds).

The secure lease proposal that we investigate is modelled on the New York program. There are important differences between our proposal and the WA pilot. For one, the secure lease proposal offers landlords an incentive payment, while WA's *Assisted Rental Pathways* relies on guarantees with respect to secure future rental yields and restoration of any property damage to attract landlords. The WA program also allows landlords to adjust rents annually in accordance with the ABS' Housing CPI for Perth. As the Housing CPI component typically runs ahead of the All Groups CPI, this method of regulating rents is more lenient than what we envisage for our secure lease program.

The *Assisted Rental Pathways Pilot* allows WA landlords to sell their property at any time. However, as specified on the Government of Western Australia Housing Authority website (2016b):

> If the property is sold during the term of the Residential Tenancy Agreement, the new owner must take over the rights and responsibilities of the landlord under the existing fixed term Residential Tenancy Agreement and the Owner Agreement. The terms and conditions of the lease will continue until the end of the fixed term agreement.

Landlords participating in the WA scheme are therefore not able to sell their properties with vacant possession; this restriction will tend to reduce the market value of the property on resale. Our secure leasing proposal, on the other hand, does *not* permit sale of the property during the five-year tenancy agreement, but offers compensation in the form of a rent premium.[48]

In Chapter 5, we begin our exploration of secure leases by estimating of the number of households in private rental housing that might find secure leases attractive, and that are also eligible for public housing. In Chapter 6, we describe our rent premium formula; this is a novel aspect of the proposal and is based on an estimate of the relative return-on-investment options that a landlord sacrifices when committing to a five-year secure lease. There follows a budget costing of secure leases (Chapter 7), assuming that the program is made available to all those households we identify as both income-eligible for public housing and in need of more secure housing than is typically on offer in the private rental market.

[48] Another example of this kind of program is Toronto's Rent Supplement Program (see Housing Connections 2008).

5 THE NEED FOR SECURE LEASE AGREEMENTS: POPULATION ESTIMATES

5.1 Data and research methods

The secure lease proposal is designed for those people who are eligible for public housing but currently reside in private rental housing. It is motivated by a concern for those groups who are thought to be adversely affected by insecure housing. For example, low-income families with children may have child care and schooling arrangements that would be badly disrupted by the unstable housing circumstances characteristic of private rental housing. The elderly, disabled and those suffering from long-term health conditions are also likely to place a high value on stable housing. There is abundant evidence that the elderly prefer to age in place (see, e.g. Bridge, Davy et al. 2011). On the other hand, there are low-income groups vulnerable to housing affordability stress—young people on low incomes for example—who might prefer the greater mobility associated with private rental housing.

Our estimates of the number of households that might be targeted by the secure lease program are therefore confined to private rental households that are eligible for public housing under income and asset tests. The household must also have at least one of the following three characteristics:

- contains one or more person(s) aged over 64 years of age
- contains one or more person(s) with a long-term health condition or disability
- contains one or more school-aged dependent children (children aged 15 years or under).

To operationalise these criteria for the purposes of identifying households eligible for a secure lease program, we once again make use of AHURI-3M, and apply cross-section population weights from the 2010 HILDA Survey to derive population estimates (see Chapter 2 for details). We source each state housing authority's assessable income thresholds as at their 2016 values and—because our determination of eligibility for secure leases is based on HILDA wave 10 data[49]—we then deflate them to 2010 prices using the ABS CPI. The state housing authorities employ slightly different definitions of assessable income, which have been taken into account when applying each authority's means test.

Our program design envisages CRA remaining in place as an important safety net to support eligible secure lease tenants in meeting their housing costs. Because entry into a secure lease tenancy is restricted to those satisfying public housing means tests, we anticipate that most tenant households will be enrolled in the CRA program. As in the first part of this report, where we forecast future CRA payments, we make use of the AHURI-3M microsimulation model (see Chapter 2), but this time we use it to forecast the future eligibility for and entitlements to CRA of tenants over their five-year secure lease tenancy.

5.2 Estimates of households eligible for secure leasing

We begin by reporting estimates of the broad group currently living in private rental housing but satisfying state housing authority means tests for public housing. This is a helpful exercise because it gives us a measure of the potential or latent need for public housing. Some, if not many, of those individuals eligible for public housing do not join waiting lists. The length of

[49] Wave 10 is the most recent HILDA Survey containing wealth modules at the time this research was conducted. HILDA's wealth modules allow us to identify asset ownership (e.g. savings bank balances and other financial holdings) that can affect eligibility for public housing under state housing authority means tests. Later in this report, when we measure rent premiums, wealth modules will again be required in order to identify the value of investment property owned by landlords

queues for public housing can deter eligible people from enrolling, especially those who are income-eligible but lack the characteristics that make them a priority for public housing.

Table 16 presents our estimates of households eligible for secure lease. Columns 1 and 2 list the sample number (count) and estimated population of private rental households that our modelling indicates as eligible for public housing. Columns 3 and 4 offer sample and population estimates of these count measures as a percentage of all households living in private rental housing. Finally, Columns 5 and 6 are sample and population incidence measures calculated with respect to all households. Each of these computations is presented for all of Australia, as well as broken down into state capital and rest-of-state divisions. Let us first consider the Australia-wide results. We estimate, on a household basis, that almost 900,000 tenants of private landlords satisfy income eligibility limits and could therefore enrol on public housing waiting lists. This estimate is well above the roughly 150,000 households currently enrolled on state housing authority waiting lists.[50] The 'visible' length of public housing waiting lists would seem to represent only a fraction of the latent need for public housing. Our figures suggest that close to one in two (47%) of all households renting from private landlords satisfy income-eligibility tests for public housing. Moreover, this is equivalent to a little over 1 in 10 of all Australian households—which gives us an idea of the scale of unmet need.

[50] According to the Productivity Commission's *Report on Government Services 2016*, 154,000 households were on public housing waiting lists as at 30 June 2015 (SCRGSP 2016).

Table 16: Households residing in private rental housing and eligible for public housing, by region, 2010

Region	Sample count of households eligible for public housing (1)	Population count of households eligible for public housing (2)	% of all private rental households; sample estimate (3)	% of all private rental households; population estimate (4)	% of all households; sample estimate (5)	% of all households; population estimate (6)
Sydney	121	176,707	40.6	44.3	11.3	12.0
Rest of NSW	141	120,431	53.8	47.5	15.0	12.2
Melbourne	130	129,133	39.9	36.2	11.3	9.2
Rest of Victoria	67	64,185	61.5	62.9	13.1	11.6
Brisbane	99	89,842	48.8	44.7	15.6	13.3
Rest of Qld	133	132,248	47.8	48.8	15.7	14.6
Adelaide	65	54,243	58.0	56.4	15.1	12.0
Rest of SA	34	17,825	61.8	55.9	15.8	11.1
Perth	50	56,220	36.2	37.0	10.2	9.1
Rest of WA	17	18,241	42.5	48.4	10.0	8.9
Tasmania	42	28,973	64.6	63.9	19.4	15.0
NT	3	4,275	15.0	19.3	5.6	6.9
ACT	12	4,686	34.3	22.2	9.0	4.0
Australia	914	897,009[51]	47.0	45.1	13.3	11.5

Note: The unit of analysis is the household; Source: Authors' own calculations using AHURI-3M and wave 10 of the HILDA Survey.

[51] This estimate is considerably higher than the 465,356 estimate of unmet housing needs produced by Groenhart and Burke (2014). There are three reasons. First, Groenhart and Burke (op cit.) apply the Victorian income eligibility thresholds - which are higher compared to other States- to all States and Territories. We have instead modelled each State's different income eligibility rules. Second, the authors have used ABS's income range data that places a household within an income range. Our study utilises the actual household income amounts reported by the HILDA survey's responding households. Third, Groenhart and Burke (op cit.) assign all households within an income range to the upper income point of the ABS income range, thereby overestimating their household income and underestimating eligibility for public housing if the income eligibility threshold for public housing lies within that income range.

The geographical spread of this unmet need turns up some interesting patterns (see Table 16). It is in regional Australia, as approximated by rest-of-state spatial units, that the latent need for public housing accounts for the *higher proportion* of private renters. In regional Victoria and regional South Australia (SA), over 60 per cent of private rental tenants are eligible for public housing. This is also the case in Tasmania. The other rest-of-state divisions all have above-average incidence measures. However the count measures are much larger in our cities, because of their bigger populations. Sydney and Melbourne alone account for 306,000 eligible renter households, or one in three of all households we reckon are eligible for public housing.

Now let's consider our estimates of the number of households in private rental housing that are eligible for secure leases, given the criteria listed earlier. Our population estimate is that a little over 650,000 Australian households (1,035,863 persons) form the client base for secure leasing arrangements according to these criteria. This is equivalent to one in three Australian households currently living in private rental housing. Within the client base, there are three main subgroups. Households with dependent children form the biggest client subgroup (390,000), with almost all of these households composed of adults under 65 years of age. The second largest client group consists of households containing one or more adults with a disability; but many (27%) of these households also contain persons aged over 65 years (the third subgroup). Indeed, there are 178,000 households that belong to two or more of the three client subgroups.

The key demographic for this kind of affordable housing option has a youthful age profile relative to those households currently resident in public housing. In terms of life cycle stages, the 25–34 year age group, typically in the early stages of household formation, is the largest source of clients (see Table 17). This age group accounts for nearly one in three potential secure lease clients, with the 35–44 age group the next largest (22% of all clients). Indeed nearly two-thirds of the potential client group have yet to reach 45 years of age and what might be considered middle age.[52] However, as shows, just 41 per cent of existing public housing tenants are under 45 years of age. By contrast, the elderly (65 years and over) account for nearly one-quarter of all public housing tenants, while this age group makes up only 16 per cent of potential secure lease clients. It would seem that younger low-income families are being rationed out of public housing and therefore form an important client group for secure leases.

[52] As explained in the note to Table 17, we have used an attribution approach to profile the clientele age profile. This approach includes all financially independent adults within the eligible household. Young financially independent adult children living with eligible parents will be present in the sample, though they are a marginal influence on the age profile—such households represent only 2.3 per cent of secure lease households. There are a few eligible young persons in group households, predominantly young singles with a disability, but they are less than 1 per cent of those eligible for secure leases.

Table 17: Secure lease clients and public housing tenants, by age range, 2010

Age range	% [count] of all persons eligible for secure leases		% [count] of all public housing tenants	
	Sample	Population	Sample	Population
15–24	19.3	11.7	15.7	12.0
	[183]	[121,284]	[74]	[72,918]
25–34	25.9	30.9	13.3	13.7
	[246]	[320,577]	[63]	[83,079]
35–44	20.5	21.9	16.3	14.8
	[195]	[226,347]	[77]	[89,974]
45–54	11.4	13.4	18.2	15.5
	[108]	[138,634]	[86]	[94,108]
55–64	5.9	6.6	15.3	19.1
	[56]	[68,779]	[72]	[115,812]
65 and over	17.1	15.5	21.2	24.9
	[162]	[160,241]	[100]	[151,038]
Total	100.0	100.0	100.0	100.0
	[950]	[1,035,863]	[472]	[606,929]

Note: The unit of analysis is a person, and the sample is defined to include all financially independent adult persons within *eligible* households. This is an attribution approach that avoids arbitrary choice of a reference person from each household.

Source: Authors' own calculations using AHURI-3M and wave 10 of the HILDA Survey.

Table 18 confirms this observation. Roughly one in three households living in private rental housing and eligible for secure leases are couples with dependents; on adding sole parents with dependent children, we find that households with dependent children account for nearly two-thirds of the potential clientele. Yet this demographic makes up only 21 per cent of households currently living in public housing—couples with dependent children are especially under-represented in public housing, with only a 7.4 per cent share of the tenure.

Table 18: Secure lease clients, by household type, 2010

Household type	% [count] of all households eligible for secure leases		% [count] of all public housing tenants	
	Sample	Population	Sample	Population
Couple, no dependent children	7.3	7.3	13.7	17.0
	[47]	[47,869]	[41]	[59,111]
Couple with dependent children	33.6	35.7	10.4	7.4
	[217]	[233,486]	[31]	[25,720]
Sole parent with dependent children	25.9	26.7	14.0	13.3
	[167]	[174,732]	[42]	[46,180]
Singles	29.5	25.2	43.8	37.4
	[190]	[164,875]	[131]	[130,135]
Other	3.7	5.2	18.1	25.0
	[24]	[34,012]	[54]	[86,970]
All	100	100	100.0	100.0
	[645]	[654,974]	[299]	[348,116]

Note: The unit of analysis is the household.

Source: Authors' own calculations using AHURI-3M and wave 10 of the HILDA Survey.

We now compare the incomes of our client group with those of current public housing tenants. Household disposable income is a flawed measure of the financial resources available to meet the necessities of living, because it takes no account of household size or composition. Our approach is conventional; we use the equivalised income measure, which employs weights to adjust household disposable incomes. Thus large households' incomes are scaled down relative to those of small households (see note to Table 19). We have taken the equivalised household disposable incomes of all households in the HILDA sample, ranked them in ascending order and then grouped households into 10 equal-sized groups (deciles) according to their ranking. So the lowermost ranked decile (D1) contains the 10 per cent of households with the lowest equivalised household disposable incomes; equivalised incomes below about $15,000 per annum (at 2010 values) define this very-low-income group. The topmost ranked decile (D10) contains the 10 per cent of households with the highest equivalised household disposable incomes; a range defined by incomes above approximately $65,000 (at 2010 values).

The secure lease client's relative frequency distribution across these deciles is listed in Columns 2 and 3 of Table 19. The vast majority of clients (79%) have incomes below the 40th percentile (D4) of the equivalised income distribution.[53] At very low incomes, below the 20th percentile (D2), we find 30 per cent of the clientele. Furthermore, our profiling of current public housing tenants shows that there is a slightly lower percentage (70%) with incomes below the 40th percentile.[54] In summary, our potential client base is large (around 655,000 households) and, relative to current public housing tenants, it has a marginally higher representation of households with equivalised incomes below the 40th percentile. Younger families on low incomes are especially prominent.

[53] A very small number of clients are found above the 60th percentile of the distribution. Roughly three-quarters (76%) are large households with three or more young children. The second largest group (38%) are households that contain person(s) with serious health problems.

[54] There is a high concentration of public housing tenants with equivalised incomes between the 10th and 20th percentiles of the equivalised income distribution (see Table 19).

Table 19: Secure lease clients, by equivalised disposable household income range, 2010

Equivalised household disposable income (deciles) [income range $]	% [count] of all households eligible for secure leases		% [count] of all public housing households	
	Sample	Population	Sample	Population
Lowest	13.5	14.8	15.1	11.2
[-188,649–14,981]	[87]	[96,978]	[45]	[37,219]
D2	12.7	15.2	40.8	39.1
[14,997–17,823]	[82]	[99,761]	[122]	[129,887]
D3	30.7	28.4	13.0	12.7
[17,824–21,321	[198]	[186,208]	[39]	[42,135]
D4	21.2	20.4	7.0	7.1
[21,322–25,649]	[137]	[133,827]	[21]	[23,625]
D5	13.3	13.2	8.7	13.2
[25,655–30,960]	[86]	[86,554]	[26]	[43,943]
D6	5.3	5.1	6.7	5.9
[30,963–35,881]	[34]	[33,285]	[20]	[19,504]
D7	2.6	2.4	2.7	3.4
[35,886–42,586]	[17]	[15,579]	[8]	[11,176]
D8	0.62	0.4	3.0	3.7
[42,598–50,992]	[4]	[2,782]	[9]	[12,305]
D9	0	0	1.7	2.4
[51,004–64,647]	[0]	[0]	[5]	[7,927]
Highest	0	0	1.3	1.5
[64,678–max]	[0]	[0]	[4]	[4,934]
All	100.00	100.00	100.00	100.00
	[645]	[654,974]	[299]	[332,655]

Notes: 1. The unit of analysis is households. 2. Equivalised household disposable income is measured by dividing household disposable income by the value of an OECD defined equivalence scale. The OECD equivalence scale assigns 1 point to the first adult in a household, 0.7 points to each additional adult, 0.5 to each dependent child, and then sums these point scores to obtain the equivalence scale value.

Source: Authors' own calculations using AHURI-3M and wave 10 of the HILDA Survey.

The geography of the secure lease clientele is explored from a different angle in Table 20. Where previously (see Table 16) we contrasted rest-of-state spatial units with their state capital counterparts, we now strive for a more nuanced understanding by partitioning rest-of-state units into inner-regional, outer-regional and remote or very remote divisions. A majority of potential secure lease tenants (61%) live in our major cities, while less than 1 in 100 are in remote or very remote regions. However, 72 per cent of tenants currently in public housing live in our major cities. In fact, eligible secure lease tenants are disproportionately found in the inner- and outer-regional divisions of Australia. This geography likely reflects lower incomes in these regional areas, as well as a somewhat higher proportion of young families.

Table 20: Secure lease clients by remoteness area, 2010

Remoteness area	% [count] of all households eligible for secure leases		% [count] of all public housing households	
	Sample	Population	Sample	Population
Major city	55.2	60.5	63.5	72.3
	[356]	[396,143]	[190]	[251,618]
Inner regional	30.1	28.7	20.1	15.9
	[194]	[188,107]	[60]	[55,449]
Outer regional	12.9	9.9	12.4	8.8
	[83]	[64,801]	[37]	[30,591]
Remote or very remote	1.6	0.9	4.0	3.0
	[12]	[5,923]	[12]	[10,458]
All	100	100	100.0	100.0
	[645]	[654,974]	[299]	[348,116]

Note: The geographical classifications in this table are by remoteness area, where each area represents an aggregation of non-contiguous geographical zones sharing common characteristics of remoteness based on the Accessibility/Remoteness Index of Australia (ARIA). Major cities are collection districts with an ARIA index of 0–0.2, while inner-regional areas are collection districts with an average ARIA index greater than 0.2 but less than or equal to 2.4. Over 90 per cent of Sydney, Melbourne, Brisbane, Adelaide and Perth are classified as major cities, though this is not true for Hobart and Darwin. For further details see ABS (2001).

Source: Authors' own calculations using AHURI-3M and wave 10 of the HILDA Survey.

We complete our profile of potential secure lease clients by comparing their key demographic and socio-economic characteristics with those of the total HILDA sample that is representative of the Australian population (see Table 21). The secure lease clientele group is on average four years younger than the wider population and much more likely to have suffered biographical disruption (e.g. marital breakdown, bereavement). So we find that although 15 per cent of the wave 10 HILDA sample are either separated, divorced or widowed, a significantly higher proportion (25%) of secure lease clients' lives have been impacted by these circumstances. Though married couples are much less common in the client sample than the general population (32% versus 49%), the average number of children in secure lease households (at 1.2) is twice that of the HILDA sample (at 0.6). This is largely due to the much higher proportion of secure lease households with dependent children (63% versus 33%). However, when comparing the samples conditional on the presence of children, we find that the secure lease and HILDA samples have an equal mean number of dependent children (1.9). Unsurprisingly, individual disposable income for secure lease clients is only 57 per cent of that in the HILDA sample; but on a household equivalised disposable income basis, this ratio is a little lower at 55 per cent. There are other notable differences between the samples. For example, the secure lease tenants have inferior levels of educational attainment, with only 9 per cent holding a bachelor's degree, while 23 per cent of the HILDA sample have a bachelor's degree. Poor health is also a much stronger feature of the secure lease sample. The overall picture painted by these comparisons suggests that secure leases will serve a typically younger group of private rental tenants, who are low income, and either disadvantaged by poor qualifications and ill health, or grappling with pressing spending needs occasioned by the presence of dependent children.

Table 21: Summary statistics for secure lease sample compared to HILDA sample, 2010

Variable category	Variable name	Secure lease sample		HILDA sample	
		Mean	Standard deviation	Mean	Standard deviation
Marital status	Married (%)	32	47	49	50
	De facto (%)	25	43	16	37
	Separated (%)	6	23	3	17
	Divorced (%)	11	31	7	25
	Widowed (%)	8	27	5	23
	Single, never married (%)	20	40	20	40
Age	Age (years)	41.7	19.1	45.8	18.0
Highest level of education	Certificate (%)	29	45	24	43
	Diploma (%)	5	22	9	29
	Bachelor (%)	9	28	23	42
	Year 11 (%)	43	50	29	45
	Year 12 (%)	14	35	15	36
Children^	No. of dependent children	1.18	1.21	0.64	1.05
Health	Poor health (%)	39	49	24	43
Income	Individual's disposable income ($)	42,645	29,607	76,246	55,106
	Household equivalised disposable income ($)	20,529	12,850	37,359	26,623
Geographical location	Major city (%)	55	50	61	49
	Inner regional (%)	30	46	25	43
	Outer regional (%)	13	34	12	32
	Remote or very remote (%)	2	13	2	14
	Number of persons	950		11,947	

Notes: 1. The unit of analysis is persons. 2. Education qualifications represent highest educational attainment.

^ The mean number of children is computed across all households, including those without children.

Source: Authors' own calculations using AHURI-3M and wave 10 of the HILDA Survey.

6 SECURE LEASES: THEORY AND PRACTICE

6.1 Conceptual framework

As described in the introduction to Part 2 of this report, the secure lease proposal envisages a reformed housing assistance program that would incentivise private landlords to provide a longer term lease in the private rental market, and abide by an agreement to limit increases in rent to annual movements in the CPI. A key issue is determination of the incentive payment or premium that could be effective in persuading landlords to enter into secure lease partnerships with government agencies.

One way to think about how governments might incentivise private landlords is to recognise that long-term leases require landlords to sacrifice liquidity. Suppose that a landlord is contemplating offering a lease of two years at an annual (percentage) return (*R*) on the landlord's equity stake (*E*) that is assumed to be constant in year 1 and year 2. An alternative option would be to offer a sequence of short-term leases over the two-year holding period, with, say, each lease being one year in length, at the constant annual return (*R*). With a sequence of two one-year leases, the investor has the option of being able to exploit alternative investment vehicles, where returns might turn out to be superior, by the end of the first one-year lease term. When the investor commits to a two-year lease, (s)he effectively 'kills' this option. In other words, the investor gives up the possibility of using new information that emerges in year 1 that might affect the attractiveness of rental investments (Dixit and Pindyck 1995)

To establish a clear conceptual framework, let's assume (for the moment) that transaction costs are zero, that there are no tenant turnovers[55] and that there is only one alternative investment option that yields a higher percentage return (Y_H) during the second year of the investor's holding period with a probability π, and a lower percentage return (Y_L) with a probability $1 - \pi$. The landlord has an equity stake (*E*) that is assumed to be constant in real terms. On opting for a sequence of two short-term leases, the investor's expected present value (PV_1) from an equity stake (*E*) in residential housing is:

$$PV_1 = R * E + \pi\left(\frac{Y_H * E}{1+i}\right) + (1-\pi)\left(\frac{R*E}{1+i}\right) \qquad (1)$$

Where *i* is the discount rate employed to convert returns received in future years into present values. At the start of the second year, the investor will elect to realise her equity stake in the property investment only if the alternative investment option yields the higher return Y_H. This occurs with probability π. The investor therefore retains the property investment with probability $1 - \pi$, and if she does so the return is *R*. On the other hand, the investor who offers a two-year lease receives a stream of returns with a present value (PV_2) given by:

$$PV_2 = R * E + \left(\frac{R*E}{1+i}\right) \qquad (2)$$

The investor who offers a two-year lease therefore gives up a liquidity premium (LP_2) equal to the difference between equation (1) and equation (2):

$$LP_2 = PV_1 - PV_2 = \pi E\left(\frac{Y_H - R}{1+i}\right) \qquad (3)$$

With a five-year secure lease, the liquidity premium is given by:

$$LP_5 = \pi E\left[\frac{Y_H - R}{1+i} + \frac{Y_H - R}{(1+i)^2} + \frac{Y_H - R}{(1+i)^3} + \frac{Y_H - R}{(1+i)^4}\right] \qquad (4)$$

[55] So there are no periods when the property is vacant and zero rental income is generated.

However, this expression ignores transaction costs. Property is a lumpy, complex investment; investors therefore incur a typically large transaction cost when realising their equity stake. Suppose that investors must meet a transaction cost that is the fraction $0 < t < 1$ of the property price (P), which is assumed constant in real terms. The investor can only exercise the option to sell up once. If the investor who has kept his investment options open sells up at the end of year 1, a transaction cost ($t*P$) must be met. However, this will only be incurred with probability π, and so the expected present value of the transaction cost associated with the exercise of this option is:

$$\pi\left(\frac{tP}{1+i}\right) \qquad (5)$$

If the investor retained the property in year 2, which he will do with probability $1 - \pi$, and then sells up at the end of year 2, which he will do with probability π, the expected present value associated with the exercise of this option is:

$$(1-\pi)\pi\left(\frac{tP}{(1+i)^2}\right) \qquad (6)$$

Repeating this up to the end of year 4, and then summing each term, we obtain the expected present value of the transaction cost (T) associated with the exercise of an option to sell up at the end of either year 1, 2, 3 or 4:

$$T = \pi\left(\frac{tP}{1+i}\right) + (1-\pi)\pi\left(\frac{tP}{(1+i)^2}\right) + (1-\pi)^2\pi\left(\frac{tP}{(1+i)^3}\right) + (1-\pi)^3\pi\left(\frac{tP}{(1+i)^4}\right) \qquad (7)$$

The liquidity premium net of the expected present value of transactions costs (LP_5^t) is computed by subtracting T, as calculated in equation (7), from the liquidity premium in equation (4). We refer to this as *the incentivising premium*.

In principle, tenants with a preference for longer lease terms—say five years rather than one—can offer to pay landlords an incentivising premium at least equal to LP_5^t. As this compensates landlords for the option value that is sacrificed, we should witness a variety of leases of different durations in the private rental market. Rents struck on *vacant possession* are predicted, according to this line of reasoning, to be higher on longer term leases.[56] However, in the unregulated Australian rental housing market leases are almost always short term. The long-term lease proposal therefore requires Australian governments to offer landlords a rent premium as defined by equation (3).

One possible reason for the absence of long-term leases in the private market is that rental housing units are not like bonds of different maturities; the investor holding a long-term bond sacrifices liquidity in the same way as a landlord offering long-term leases, but while the rental investor cares about the identity and character of his tenant, the entity issuing bonds is indifferent as regards the identity and character of the bond holder (Benjamin, Lusht et al. 1998; Miceli 1989). Some tenants will exercise care in their use of a rental property, while others may fail in their duty of care, with adverse consequences for property condition ('agency risk'). Screening can help reduce this agency risk, and security bonds provide some insurance that landlords can fall back on, but the risk is not eliminated (Allen, Buttimer et al. 1995; Seelig 2003).

This suggests that a long-term leasing approach will require arrangements that both compensate landlords for the option value that they sacrifice, but also insures landlords with respect to agency risk. This latter aspect is perhaps best achieved by guaranteeing return of the property in its original condition at the end of its lease term. The analysis we conduct in

[56] On vacant possession, the landlord knows little about the prospective tenants that might occupy their property. If the landlord is negotiating with a sitting tenant, they have knowledge of the duty of care that has been exercised by the sitting tenant. This could influence the rent that a landlord is willing to accept over leases of different durations. The framework we consider abstracts from these considerations by assuming that investors have acquired properties that are not occupied by sitting tenants, but leased with vacant possession.

this report concentrates on estimates of the rent premium that could be offered to landlords to compensate for loss of option value.

6.2 Practical steps to estimation of liquidity premium

There are four key parameters ($\pi, Y_H, t \; and \; i$) that we need to impute in order to estimate the incentivising premium—that is, equation (4) minus equation (7).[57] We invoke the following assumptions.

- Landlords consider the best alternative investment (next to rental property) to be a balanced portfolio of shares publicly issued and traded on the Australian stock market.
- The future income streams on property and equity investments are capitalised into current property and share prices. The expected long-term returns on rental investments and shares can then be inferred from changes in house price and share price indices.
- We employ quarterly changes in the S&P/ASX 200 index from 2001Q1 to 2016Q1 as our measure of quarter-on-quarter percentage returns from a balanced portfolio of shares. We employ the quarterly ABS Residential Property Price Indexes: Eight Capital Cities (weighted average) over the same time frame, to measure quarter-on-quarter long-term percentage returns on residential property investments.[58]
- Our measure of π is based on the proportion of quarters over the period 2001Q1 to 2016Q1 in which quarterly returns on shares exceed quarterly returns on property.
- The difference $Y_H - R$ is set equal to the average difference in annual returns over those quarters where $Y_H > R$ and multiplied by the landlord's equity holding, to obtain dollar estimates of the sacrifice made if options to sell up are ruled out by a secure lease.
- The chosen cap (discount) rate is 8 per cent—a base rate recommended in Harrison (2010), given his estimate of the marginal return to private capital in Australia over the past four decades.

Table 22 summarises, by listing, the definitions of key parameters, the sources of parameter values that have been used in computations, and the values of these key parameters. These values are used in Chapter 7 to estimate the budget cost of the proposed secure lease program.

Table 22: Parameter values chosen for estimating the liquidity premium

Parameter	Definition	Parameter value (%)
π	Proportion of quarters during which returns on shares exceeded returns on property over the period 2003Q3 to 2016Q2	29 / 52 = 55.77
Y_H	Quarterly returns on shares (when $Y_H > R$), based on the S&P/ASX 200 index from 2003Q3 to 2016Q2	5.98
R	Quarterly returns on property (when $Y_H > R$), based on the ABS Residential Property Price Indexes: Eight Capital Cities (weighted average) from 2003Q3 to 2016Q2	1.23
$Y_H - R$	Difference in returns during quarters in which returns on shares exceeded returns on property over the period 2003Q3 to 2016Q2	4.74
i	Discount rate	8
t	Transaction cost as a percentage of property price, based on values used in Wood and Ong (2008)	3.5

[57] The data source we employ reports return (R) and so there is no need to impute its value.

[58] To obtain more disaggregated estimates, we could use capital city indexes to obtain city-specific measures of π and Y_H. These more refined measures might prove helpful in designing secure leases in each state and territory.

7 SECURE LEASING VERSUS PUBLIC HOUSING: BUDGET COST ESTIMATES

In this section we address important budget cost issues. Our proposed version of a secure lease program has the potential to offer secure and affordable housing to a group that are eligible for housing assistance in the form of public housing, but at a lower cost than if they were housed in public housing. The base year for our costing exercise is 2010; this year coincides (at the time of conducting the research) with the latest HILDA wealth module, which is needed in order to match landlords to secure lease tenants (see below). Our approach is to first estimate a baseline housing assistance budget that is the sum of Commonwealth Rent Assistance (CRA) payments made to households that we identify as eligible for secure leases. These are the current budget outlays of Commonwealth government in meeting its housing assistance obligations to these households under the CRA program. Our estimates cover a five-year period 2010–14 over which we assume that those eligible to receive CRA in 2010 continue to receive CRA over this five-year period.

The second stage of this costing exercise estimates the incentivising premium that we consider necessary in order to entice a sufficient number of private landlords to offer secure lease agreements. These estimates operationalise the formulae derived in Chapter 6 and again cover the same 2010–14 time frame. Secure lease tenants continue to be eligible for CRA payments; but because rents are capped to increase in line with consumer price inflation, we must re-estimate budget costs for this item as they will be slightly lower than under actual market rents (i.e. that increase in real terms over the time frame). Finally, we produce two budget cost estimates for the alternative option of accommodating secure-lease-eligible tenants in public housing. In the first costing, we estimate the capital costs of constructing new public housing to meet the accommodation needs. In the second costing exercise, we estimate the total subsidy paid out by government if secure-lease-eligible tenants were housed in public housing over the same five-year period (2010–14).

7.1 Current cost of housing assistance to secure-lease-eligible households

Each of the 897,009 households (income units) that we identify as eligible for the proposed secure lease program is currently in private rental housing. We use their rent payments, as reported in HILDA, and the AHURI-3M microsimulation model to determine their eligibility for CRA in 2010—and if they are eligible, we estimate each household's entitlement to CRA payments given the program's key parameters (e.g. rent thresholds above which CRA is paid). To estimate CRA payments in each of the subsequent years (2011–14), we assume that the real annual increase in each household's fortnightly rent is equal to the difference between the annual percentage change in the CPI housing component, and the annual percentage change in the All Groups CPI.[59] These key data items, and the computations that are based on them, are reported in Table 23. The table shows how rents have moved ahead of consumer prices in each year of the forward estimates, with real rents increasing by nearly 3 percentage points in 2013.

Average fortnightly rents paid by secure-lease-eligible households were $457 per fortnight in 2010, but by 2014 they had increased in real terms to $490 (see Table 24)—that is, 7.2 per cent above their 2010 levels. Under the secure lease proposal, average fortnightly rents are held constant in real terms, and thus would have helped protect tenants from these housing affordability pressures.

[59] We assume ceteris paribus conditions for the real values of all other financial variables, including earnings and income, and also hold constant the demographic composition of households.

Table 23: Changes in the weighted average CPI across all capital cities, 2010–14

Year	CPI—Housing component [A]	CPI—All Groups [B]	Change in CPI from same period in previous year—Housing component (%) [C]	Change in CPI from same period in previous year—All Groups (%) [D]	Difference between columns C and D (%) [E]
2010	93.2	95.8			
2011	97.5	99.2	4.6	3.5	1.1
2012	100.7	100.4	3.3	1.2	2.1
2013	106.0	102.8	5.3	2.4	2.9
2014	110.1	105.9	3.9	3.0	0.9

Source: Authors' own calculations based on ABS (2016).

Table 24: Mean and median fortnightly rent, 2010–14

Year	Mean rent ($)	Median rent ($)
2010	456.7	457.7
2011	461.7	462.7
2012	471.4	472.5
2013	485.1	486.2
2014	489.5	490.5

Note: Dollar amounts are expressed in real dollars at 2010 prices.

Source: Authors' own calculations using AHURI-3M and wave 10 of the HILDA Survey.

Our microsimulation estimates indicate that in 2010, 61 per cent of all secure-lease-tenants are also eligible for CRA. This is equivalent to 622,119 persons. Their average annual CRA payment was estimated to be $2,765 in 2010. The real value of these average payments creeps up to $2,814 by 2014, an increase of 1.8 per cent (see Table 25). The real increase in average payments lags behind real rent increases because maximum CRA payments are capped and binding for growing numbers of secure lease households.[60] A budget cost of $1.72 billion is estimated for 2010, increasing by 2.9 per cent to $1.77 billion (at 2010 prices) in 2014. Over the forward estimates, budget costs sum to $8.6 billion.[61]

[60] CRA rebates 50 cents of each additional dollar in rent, paid up to a rent ceiling that varies across households according to their size and composition. In 2010, 454,486 secure-lease-eligible tenants paid rents in excess of the rent ceiling and were therefore receiving the maximum CRA payment. This is nearly three-quarters of those secure-lease-eligible tenants that are also eligible for CRA. By 2014, their number had risen to 484,652, an increase of 6.6 per cent on 2010 numbers.

[61] To ensure equivalence with budget cost estimates associated with the secure lease incentivising premium, the forward estimates are converted to a present value using an 8 per cent discount rate.

Table 25: Cost of CRA for secure-lease-eligible tenants in private rental, 2010–14

Year	Mean amount of CRA received per tenant who receives CRA ($)	Total budget cost of providing CRA ($000,000s)
2010	2,764.5	1,719.8
2011	2,570.2	1,599.0
2012	2,795.9	1,739.4
2013	2,821.4	1,755.2
2014	2,814.0	1,760.0
Total over five years		8,571.6

Note: Dollar amounts are expressed in real dollars at 2010 prices.

Source: Authors' own calculations using AHURI-3M and wave 10 of the HILDA Survey.

7.2 Cost of accommodating eligible households under a secure lease arrangement

Under the secure leasing option there are two budget outlays: the payment of incentivising premiums to landlords, and CRA payments that continue to be paid to eligible secure lease tenants. However, because secure lease rent increases are capped to increases in the CPI, there will be a small budget saving because of lower CRA payments.

7.2.1 Budget cost of the incentivising premium

The HILDA data set asks respondents to report ownership of residential property in addition to their principal place of residence. Survey participants are also asked to declare sources of income, which includes rental income from investment properties, as well as their market value. These data items allow identification of rental investment properties and their landlords. We randomly select 577 such properties, to match the number of households in the HILDA sample that we determine as eligible for secure leases.

The budget cost of meeting the incentivising premium operationalises equations (4) and (7) in Chapter 6.[62] The liquidity premium is estimated to be $17.7 billion, and on subtracting an estimated transaction cost of $7.6 billion, we arrive at a budget cost estimate of $10.1 billion (see Table 26). The average (median) one-off incentivising premium is $14,891 ($10,694), or, on an annual basis, $3,498 in each year of the five-year lease.[63] If the premium were paid on this yearly basis, then the annual equivalent budget cost (given 681,244 secure lease properties[64]) is $2.38 billion—an amount that is less than the total actual cost of CRA payments ($3.1 billion) made in fiscal year 2010–11 (AIHW 2016).

There is a considerable variation in budget cost estimates across mainland states (see Table 26). The large populations in NSW and Victoria explain the relatively high budget costs in those states ($3.6 billion and $2.3 billion respectively). There are also considerable

[62] On a population-weighted basis, 4.3 per cent (0.6%) of randomly selected secure lease rental property investors have negative (zero) equity holdings. For these properties, the annual liquidity premium defined by equation (4) (see Chapter 6) is set to zero—this amounts to only 25 properties out of the 577 secure lease properties in the HILDA sample.

[63] The $14,891 one-off incentivising payment is made at the start of the five-year lease. The $3,498 estimate is the constant annual payment, which has a present value of $14,891 when discounted at a rate of 8 per cent per year.

[64] This figure is slightly higher than the estimated 654,974 households deemed in need of secure leasing (see Chapter 5). We attempt to get as close as possible to the required number of properties in each location on a weighted basis however some discrepancy is unavoidable when converting from an unweighted to weighted sample.

differences in the amounts paid to landlords, because the incentivising payment is a function of the equity holding, not the value of the property. The payments are thus skewed to the right of the average, because some landlords have very large equity holdings. Thus the median premium ($10,694) is lower than the mean ($14,891). The incentivising payment is therefore attractive to equity investors, but much less so to negatively geared investors.

Table 26: Budget cost estimates for the secure lease incentivising premium, 2010–14, by state

State	Mean premium ($)	Median premium ($)	Total budget cost ($000,000s)
NSW	15,256.5	10,438.5	3,601.3
Vic.	14,697.0	11,598.3	2,256.3
Qld	12,037.2	8,631.8	1,822.8
SA	12,684.7	5,822.1	718.3
WA	24,303.2	17,397.4	1,364.1
Total	14,891.1	10,694.3	10,144.4

Notes: 1. Tasmania, NT and ACT are included in the total budget estimates, but are not separately reported because sample numbers are small; 2. Dollar amounts are expressed in real dollars at 2010 prices.

Source: Authors own calculations using AHURI-3M and wave 10 of the HILDA Survey.

7.2.2 CRA budget cost estimates, assuming rent increases are capped to increases in the CPI

The secure lease proposal envisages ‘light touch’ rent regulation that caps rent increases at no more than the increase in the CPI over the five-year lease arrangement. There is therefore an offsetting budget saving, because the rents of secure lease tenants are marginally lower than would otherwise be the case given the real rent increases that transpired over the years 2010–14 (see Table 24). We estimate that with average real rents constant (at $457 per fortnight), average annual CRA payments will also remain unchanged (given our ceteris paribus assumptions). The CRA bill will then sum, over five years, to $7.4 billion under secure leases, instead of $8.6 billion under status quo conditions. This $1.2 billion budget saving can be deducted from the estimated $10.1 billion budget cost of instituting the secure lease program.

7.3 Cost of accommodating secure-lease-eligible households in public housing

7.3.1 Capital costs estimates

As outlined in the introduction to this chapter, we offer two estimates of the budget cost of accommodating the 681,244 secure-lease-eligible households in public housing. Table 27 offers estimates of the total cost of constructing the 681,244 housing units required to meet the need we have identified. It offers a range of estimates, corresponding to alternative estimates of per-housing-unit capital costs that range from $250,000 to $450,000. At the midpoint of this range, capital funding of $238 billion would be needed—a huge budget cost. To gauge the scale of the investment required, consider that the 2010 Australian GDP was $1,320 billion (ABS 2012b). These figures indicate that capital funding to meet the backlog of need for secure affordable social housing would account for roughly 18 per cent of Australian GDP. At the upper end of our capital cost estimates, the share of GDP required jumps to 23 per cent.

Table 27: The capital cost of accommodating secure-lease-eligible households in public housing

	Capital cost per home ($)				
	250,000	**300,000**	**350,000**	**400,000**	**450,000**
Budget cost ($billions)	170	204	238	272	306

Source: Authors' own calculations.

7.3.2 Five-year budget cost estimate

The $238 billion midpoint capital cost estimate dwarfs the $10.1 billion budget cost estimate for the secure lease proposal. However, the comparison is not on an equivalent basis. At the end of five years, the public housing program leaves government with roughly 680,000 additional housing units that it can continue to use in order to provide secure and affordable housing. While some secure lease landlords might value long-term tenants and renew leases at the end of their initial five-year term, even without another incentivising payment, there is no guarantee that this will be the outcome.

Evaluation of the budget cost on a comparable five-year basis is therefore conducted by estimating the difference between the rebated rent that eligible households are charged in public housing and the market rent if their housing were leased in the unregulated private rental market. Market rents reflect the marginal cost of expanding the stock of public housing and will tend to cover a producer's costs, including a return on their capital, while the rebated rent will typically fall short of this market rent. The difference between the two is a measure of the recurrent subsidy needed in order to offer public housing for low-income households at an affordable rent. In our calculations, rebated rents for secure-lease-eligible households are set at 25 per cent of their assessable income. The detailed definitions employed by state housing authorities have been used to estimate the assessable income of each eligible household.

Calculation of the market rent proceeds by taking the sample of all private rental households in the 2010 HILDA Survey and estimating a hedonic rent regression as a function of the characteristics of the household and the private rental property they occupy. The coefficients from the hedonic rent regression are used to predict a market rent for the accommodation offered by state housing authorities to each secure-lease-eligible household. The subsidy in public housing is calculated as the difference between this predicted public housing market rent and 25 per cent of the household's assessable income.[65]

On a population-weighted basis, the mean (median) value of the public housing subsidy per year is $4,664 ($4,174). This average subsidy remains constant in real terms over the five-year forward estimates (given our ceteris paribus assumptions). The average subsidy is equivalent to an annual budget cost of around $3 billion, or $13.1 billion over the five-year period (when discounted at a rate of 8% per year). This total is well above the estimated $10.1 billion budget cost of instituting the secure lease program.

The budget cost estimates vary across the states and territories (see Table 28). Predictably, costs are higher in NSW, Queensland and Victoria. The budget cost in Queensland is boosted by a relatively large gap between rebated rents and market rents, given the definition of assessable income in that state.

[65] There are some households that achieve a negative figure for this subsidy. In these cases, we set the subsidy equal to zero. In total, 106 (94,684) households have a negative subsidy, amounting to 16.5 per cent (14.5%) of the sample.

Table 28: Budget cost of shifting secure-lease-eligible households into public housing, 2010–14, by state

State	Annual			Five-yearly (2010–14)		
	Mean ($)	Median ($)	Total budget cost ($000,000s)	Mean ($)	Median ($)	Total budget cost ($000,000s)
NSW	5,406.3	4,617.8	1,204.5	23,312.7	19,912.5	5,194.0
Vic.	3,900.5	3,772.5	562.9	16,819.5	16,267.5	2,427.3
Qld	4,747.2	3,902.1	708.3	20,470.5	16,826.4	3,054.3
SA	3,639.0	3,248.8	206.8	15,691.8	14,009.2	891.7
WA	5,241.2	5,242.7	288.8	22,600.7	22,607.2	1,245.3
Tas.	2,926.2	2,526.2	54.4	12,618.1	10,893.3	234.6
NT	4,835.2	3,962.8	4.9	20,850.0	17,088.1	21.1
ACT	2,350.2	749.3	9.2	10,134.4	3,231.1	39.7
Total	4,663.9	4,174.2	3,039.9	20,111.3	17,999.7	13,108.4

Note: Dollar amounts are expressed in real dollars at 2010 prices.

8 CONCLUDING REMARKS

This report covers two broad topics that are linked by a concern with the rising cost of housing subsidies that is nevertheless accompanying a worsening of housing affordability. In Part 1 we used demographic and tenure change projections to forecast (for 2011–31) future expenditure on housing assistance programs, the additional outlays on ISPs due to asset test concessions to home owners, and the aggregate value of home owner tax subsidies. Our forward estimates of the total value of these three housing subsidy components indicate an increase from $25 billion in 2011 to $32.8 billion in 2031, with home owner tax subsidies comprising the largest component.

This housing subsidy value estimate reflects the influence of falling rates of home ownership in middle age groups, which hold back what would be increases in the overall rate of home ownership (due to population ageing), as well as conservative assumptions about key variables. For example, we assume constant real rents, and incomes keeping pace with rents, over the forecast time horizon (2011–31). We also project future tax subsidies assuming that the currently low rates of interest and high LVRs remain unchanged—these are important assumptions because both these variables are key factors curbing increases in housing subsidies.

An important component of any future research agenda is therefore to subject these forecasts to sensitivity tests by tweaking key variable values. For example, a more pessimistic future scenario for rates of home ownership would provide policy makers with estimates of the ramifications of such a scenario for future trends in CRA payments. There is also scope for valuable analyses of the long-term consequences of policy reform, given the expected changes in demographics and tenure outcomes. In this report, we have held policy parameters fixed while assessing the consequences for (say) budget outlays on CRA, or the aggregate value of tax subsidies. Given the large real increases that we anticipate in each of the four components of housing subsidies, it would likely be helpful, and reasonably straightforward, for us to use this forward-looking version of the AHURI-3M model to forecast these financial magnitudes under alternative policy regimes.

Part 2 of this report explored the introduction of an innovative initiative—secure leasing. This program is designed to incentivise landlords into offering long-term (five-year) leases that offer a greater degree of housing security than is commonplace in private rental housing. The initiative is one of a number of options that responds to a growing understanding (in the research and government) that substantial numbers of low-income households in private rental accommodation crave the housing security that is normally provided by public housing. We might, therefore, need differentiated forms of housing assistance, whereby some programs aim to deliver affordable private rental housing, others focus on rental housing that offers secure tenure, while yet others target both security and affordability. An important future direction for research is a more careful measurement of the numbers of households comprising each of the respective target groups.[66]

The secure lease program design is based on the idea that so-called ‘mum and dad’ investors, who typically own one or two properties at most, sacrifice an option value if they enter a long-term lease with a tenant. This is because they cannot realise their investment during the course of the lease if better returns emerge elsewhere. In this research project, we have estimated the cost of the secure lease option with respect to those households thought to be in need of secure and affordable social housing, and compared it with the cost of accommodating those same clients in public housing.

[66] The approach in this report has been to assume that low-income households in private rental, with particular personal characteristics (e.g. families with children), prefer secure lease arrangements. It could be that few of such households are actually forced to move and so the need for secure housing is exaggerated.

While secure leasing offers a substantial cost saving relative to public housing, the program would require large outlays of roughly $2.4 billion per annum—though these figures look more modest when placed alongside estimates of home owner tax subsidies ($15.3 billion in 2011). Nevertheless, our findings make clear the need for government to recognise that new public housing is but one of a number of possible ways in which the social housing sector might be 'grown' in order to expand secure and affordable housing options. A more comprehensive assessment would take alternative strategies—such as promoting the involvement of pension funds and other sources of funding—as the benchmark against which to judge secure leasing. This is an important future direction for research.

Finally, a cautionary note is warranted. There are structural problems that impair the operation of Australian housing markets and which are probably the root cause of housing affordability problems. The secure leasing proposal does not directly address these structural causes. It should therefore not be viewed as a panacea or 'silver bullet' that will reverse the long-standing deterioration in housing affordability. Secure leasing is, however, a potentially helpful initiative that could accompany structural reform.

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APPENDIX

Appendix 1: User cost approach to the measurement of tax subsidies

To arrive at a measure of tax subsidies for home owners, we use AHURI-3M to estimate home owners' user costs of capital under existing (2011–12) and tenure-neutral tax arrangements. Our estimate of tax subsidies received by home owners is equal to the difference in user costs under the alternative tax arrangements.

This appendix sets out the algebraic derivation of the user cost expression under existing and tenure-neutral arrangements. We broadly follow the approach described in a United States (US) study by Poterba and Sinai (2008) and replicated in an Australian study by Wood, Stewart et al. (2010) for a report commissioned by the Henry Review. Following Wood, Stewart et al. (2010), our estimates reflect Australian rather than US tax arrangements. However, while Wood, Stewart et al.'s study was based on 2006–07 tax parameters, the current study is based on 2011–12 parameters.

The user cost expression under current (2011–12) tax arrangements in this study is:

$$UC0 = IFRE - [MITR * (1 - LVR) * IFRE] + [(1 - MITR) * RPREM] + MDEP + PTAX + BINS - HAP$$

where

UC0 = user cost as a percentage of family home value under current arrangements

IFRE = risk-free medium-term interest rate

MITR = income unit marginal income tax rate

LVR = loan-to-value ratio

RPREM = risk premium

MDEP = maintenance and depreciation rate

PTAX = property tax rate

BINS = building insurance rate

HAP = house price appreciation rate

The user cost expression under the tenure-neutral arrangement is:

$$UC1 = IFRE + RPREM + MDEP + PTAX + BINS + LTAX - HAP - [(MITR/(1 - MITR)) * LVR * (IMORT - IFRE)] - [HAP/(1 - MITR)] + (AMORT * CAPTAX)$$

where

UC1 = user cost as a percentage of family home value under tenure-neutral arrangements

LTAX = land tax rate

IMORT = mortgage interest rate

$$AMORT = DELTA / \{(1 - MITR) * [\exp(DELTA * HP) - 1] * (1 - AGEN)\}$$

where

DEPR = depreciation rate

AGEN = agency cost rate

$$DELTA = [HAP - (DEPR + K)]$$

where

$K = (1 - MITR) * IMORT$

$CAPTAX = 0.5 * MITR * \{[(1 - BROK) * \exp(HAP * HP)] - (1)\} * \exp(-K * HP)$

where

BROK = brokerage rate

HP = holding period

The home owner tax subsidy is then calculated as:

$TAXSUB = (UC1 - UC0) * HVAL$

where

TAXSUB = home owner tax subsidy

HVAL = family home value

We derive a mean population-weighted user cost estimate of 5.4 per cent under current tax arrangements versus 5.8 per cent under a tenure-neutral arrangement.[67]

[67] Wood, Stewart et al.'s (2010) average user cost estimates were 5.9 per cent (6.6%) under existing (tenure-neutral) arrangements in 2006–07.

Table A1: User cost parameters

Variable	Estimate	Notes
IFRE = risk-free medium-term interest rate	5.31%	Average of RBA monthly 10-year treasury bond rate from July 2011 to June 2012
MITR = income unit marginal income tax rate	Mean = 24.8%	Income weighted average of both partners' marginal income tax rate based on 2011–12 tax schedule
LVR = loan-to-value ratio	Mean = 23.3%	Mortgage debt as a percentage of property value
RPREM = risk premium	2% of property value	As in Poterba and Sinai (2008)
MDEP = maintenance and depreciation rate	2.5% of property value	As in Poterba and Sinai (2008)
PTAX = property tax rate	Mean = 0.4%	Average property taxes as a percentage of property value, by location (capital city and rest-of-state for each state/territory) from the 2011–2012 SIHC
BINS = building insurance rate	0.2% of property value	AHURI-3M parameter
HAP = house price appreciation rate	3.5%	AHURI-3M parameter
LTAX = land tax rate	Mean = 0.05%	Based on 2011–12 investors' land tax schedule. Assumes that land constitutes 57% (39%) of property value in metro (regional) areas, as per AHURI-3M assumption
IMORT = mortgage interest rate	8.65%	Average of RBA monthly mortgage interest rate from July 2011 to June 2012
DEPR = depreciation rate	1.4% of property value	AHURI-3M parameter
BROK = brokerage rate	3.5% of property value	AHURI-3M parameter
HP = holding period	10 years	AHURI-3M parameter

Note: Wood, Stewart et al.'s (2010) parameters for 2006–07 were: *IFRE* = 5.85%, mean *MITR* = 25.5%, mean *LVR* = 22%, mean *PTAX* = 0.6%, mean *LTAX* = 0.05%, mean *IMORT* = 7.95%. The rest of the parameters in this table are consistent with Wood, Smith et al. (2010).

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