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Abstract

We evaluate the Home Equity Access Scheme (HEAS), a reverse mortgage program offered by the Australian government to supplement retirement income. The HEAS allows older homeowners to age in place by providing loans secured against their home equity. We develop a new stochastic lifecycle model incorporating house price, financial, aged care, and longevity risks to quantify the welfare effects of HEAS use across different representative household types and wealth levels. We apply the model to compare different strategies for utilising the HEAS to increase retirement income and cover aged care costs. We also perform policy experiments to evaluate potential changes to HEAS design. Our results show that a government-offered reverse mortgage program, where loan payments are linked to public pensions, can be a welfare-enhancing method of supplementing retirement incomes. Of the strategies we explore, opting for maximum HEAS payments yields the largest welfare gains for most households. Sensitivity analysis indicates that our results are robust to variations in the HEAS interest rate and house price growth and that welfare gains are inversely related to the strength of the bequest motive.

Keywords: Reverse mortgages, government pensions, retirement income, scenario analysis

JEL classification: D14, D15, G51

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1 Introduction

Population ageing is placing increasing pressure on pension systems worldwide as traditional funding models struggle to keep pace with rising life expectancies and shrinking workforces. Retirement income is typically supported by a combination of public pensions, employer-sponsored occupational pensions, and private savings. However, these sources are proving increasingly insufficient to meet the financial needs of an ageing population. At the same time, many retiree households hold significant wealth in their homes. Home equity release products, such as reverse mortgages, offer a potential solution by allowing retirees to liquefy housing wealth to supplement retirement income (Knaack et al., 2020; Australian Treasury, 2020). However, despite their availability in countries like Australia, Japan, Korea, the United Kingdom, and the United States, private markets for reverse mortgages remain relatively small.

This paper evaluates the Home Equity Access Scheme (HEAS), one of the few government-provided reverse mortgage programs globally[1]. The HEAS allows older Australians to receive a non-taxable loan from the government to supplement their retirement income. Available to all Australians who have reached the public pension age and own real estate in Australia (including a family home, investment property, or farmland), participants are not required to make repayments until the property is sold. Originally introduced in the mid-1980s as the 'Pension Loans Scheme', the scheme has seen significant reforms announced in the 2018-19 and 2021-22 Federal Budgets, reflecting the government's increased interest in the scheme. These reforms, along with rising living costs, have led to a substantial growth in HEAS participation albeit from a very low base), from 768 in June 2019 to 13,479 participants in June 2024, compared to Australia's approximately 3.7 million homeowners aged 65 and over.

Our paper makes three key contributions. First, we provide a detailed analysis of the HEAS as a unique government-offered reverse mortgage scheme and place it in the context of Australia's retirement income system, to inform policymakers in other countries considering similar schemes. Second, we evaluate the welfare effects of the HEAS across a broad range of representative retiree households, covering various demographics and wealth levels for a more comprehensive perspective than earlier studies. Third, we conduct a policy experiment to assess the impact of increasing maximum annual HEAS payments and we quantify the impact of low HEAS interest rates compared to commercial

[1] In South Korea, the Korea Housing Finance Corporation (KHFC), a government-backed financial institution, offers a reverse mortgage program. In the United States, reverse mortgages are issued by private lenders but are insured by the federal government through the Home Equity Conversion Mortgage (HECM) program.

reverse mortgage rates. In doing so, we illustrate how our model can guide policymakers in Australia and internationally on designing and refining public reverse mortgage schemes.

Our study builds on a growing body of research on optimal reverse mortgage demand, with most studies focusing on the US market, where reverse mortgages are issued by private lenders and insured by the federal government through the Home Equity Conversion Mortgage (HECM) program (e.g., Nakajima and Telyukova, 2017; Cocco and Lopes, 2020; Achou, 2021). However, recent policy changes to the HEAS have spurred research in the Australian context. For example, Koo et al. (2022) used calibrated lifecycle models to study optimal loan amounts and timing under the 2019 HEAS settings, finding significant welfare gains for asset-rich, cash-poor retirees. Lyu et al. (2023) compared HEAS strategies to downsizing for single female retirees, while Lamarra et al. (2023) used stochastic modelling to assess HEAS strategies according to various retirement objectives. Our work extends this literature by providing a detailed welfare analysis across diverse household types and assessing the HEAS in its current, reformed context.

To quantify the welfare effects of the HEAS and explore potential design improvements, we developed a stochastic lifecycle model that incorporates aged care risks, longevity risks, house price risks, and financial risks, while also accounting for means-tested public pensions, private pensions, relevant taxes, and other government policies. Model inputs were estimated using data from the nationally representative Household, Income and Labour Dynamics in Australia (HILDA) Survey. Our results indicate that HEAS participation can significantly improve welfare for most retiree households, with the highest welfare gains achieved through the maximum payment option among the studied HEAS strategies. Our policy experiment further suggests that increasing the maximum annual payment from the HEAS under a given maximum loan amount does not benefit most households, as retirees prefer the existing maximum payments over higher payments of shorter duration.

Overall, our findings suggest that a government-offered reverse mortgage scheme linked to public pensions can effectively supplement retirement incomes without the need for additional taxes or pension contributions. The modelling framework we developed can be adapted to other contexts, informing the development of similar schemes in other countries facing the financial pressures of population ageing on pension system sustainability. For Australian policymakers, our results identify HEAS use methods that are particularly effective from a welfare perspective and quantify the potential impact of changes to the scheme's design.

The paper is structured as follows. Section 2 provides background on the HEAS and the Australian retirement landscape. Section 3 describes the new stochastic lifecycle simulation model, while Section 4 presents the simulation results. Section 5 discusses the contributions and concludes.

2 Background

This section describes the Australian retirement income system and the Home Equity Access Scheme (HEAS), both of which will be modelled in Section 3.

The Australian Retirement Income System

The Australian retirement income system comprises three main components: (i) the government-funded 'Age Pension', (ii) a mandatory, employer-funded retirement savings scheme known as the superannuation guarantee, supplemented by voluntary contributions, and (iii) voluntary personal savings.

The Age Pension is paid to Australian residents[2] who have reached the pension age of 67 and meet a comprehensive means test. The full Age Pension rate is benchmarked to 27.7% of average male wages for single retirees and 41.76% for retiree couples and is indexed every six months to the higher of the growth in the consumer price index (CPI), the pensioner and beneficiary living cost index[3], and male total average weekly earnings. In September 2024, the current full Age Pension rate was A$29,024 per year for a single and A$43,753 for a couple.

The Age Pension is means tested by both income and assets. Assets include superannuation, financial investments, real estate, businesses, home contents, personal assets, gifts in excess of maximum limits, and outstanding loans. The family home is excluded from the assets test. Income includes income generated from these assets as well as income from employment (above a threshold) and overseas pensions. Special rules apply to income from superannuation, and, as a form of simplification, income from aggregate financial assets is 'deemed' to earn a set rate of income. In September 2024, the deeming rates were 0.25% for the first A$62,600 of aggregate financial assets for a single retiree (A$103,800 for a couple) and 2.25% above these thresholds. The thresholds are indexed annually to the CPI, while the government periodically adjusts deeming rates to reflect returns available from financial investments. Regular payments from reverse mortgages, including the HEAS, are excluded from the income test. Under the income test, the full Age Pension is reduced by 50 cents per fortnight for every

[2] To be eligible for the Age Pension, a person must have been an Australian permanent resident for at least 10 years, with at least 5 years being continuous.
[3] The pensioner and beneficiary living cost index is a variation of the CPI which measures quarterly changes in the retail price of a basket of goods and services that are typically purchased by pensioner and beneficiary households.

dollar of income above a threshold (which differs for single and couples). Under the assets test, the full Age Pension is reduced by A$3 per fortnight for every A$1,000 of assets above a threshold that differs by single/couple and homeownership status.[4] The test that results in the lowest pension rate is applied to determine the amount of Age Pension paid. In 2023, around 70% of people of Age Pension age received the Age Pension, with around 67% paid at the full rate, leaving around 30% of older Australians as so-called 'self-funded retirees' (AIHW, 2023).

Superannuation comprises mandatory employer contributions under the superannuation guarantee and voluntary contributions. The current mandatory rate is 11.5% and is legislated to increase to 12% in 2025-26. It does not cover the self-employed; however, around 25% of workers with superannuation and 70% of the self-employed make voluntary contributions, encouraged by tax concessions. Over 90% of workers have superannuation accounts, but since the scheme is still maturing, retirement balances are modest. In July 2021, the median superannuation balance at ages 60-64 was A$211,996 for males and A$158,806 for females (ASFA, 2023). Australians can draw down their superannuation at retirement as a lump sum, an income stream, or both. Australian retirees are reluctant to annuitise: only 3.5% of assets held in pension accounts are in annuities, while 84% are in account-based pensions (Australian Treasury, 2023), which are investment accounts that allow flexible withdrawals subject to an annual minimum drawdown rate that increases with age[5].

A widely used metric to gauge the adequacy of Australia's retirement income arrangements is the Australian Superannuation Funds of Australia (ASFA) Retirement Standard, which estimates the amount of money needed in retirement based on lifestyle. In October 2023, the ASFA Retirement Standard was A$32,417(single)/A$46,620 (couple) for a modest lifestyle and A$50,981 (single)/A$71,724 (couple) for a comfortable lifestyle. The ASFA Retirement Standards are indexed quarterly to the CPI.

Retirees also rely on voluntary savings in financial assets, real estate, and businesses. In fact, most household wealth for those aged 65 and over is held outside the superannuation system, with owner-occupied housing the largest asset for most retirees (Australian Treasury, 2020). Around 82% of those over 65 own their home, including 73% of Age Pensioners (Australian Treasury, 2020; DSS, 2021a). In Australia, the family home is exempt from capital gains tax and the Age Pension assets test. Options to access home equity in retirement include downsizing, the HEAS, commercial reverse mortgages, with current reverse mortgage rates ranging between 8.65% and 9.75% (September 2024), and home

[4] The income and asset test thresholds are indexed annually to the CPI.

[5] The age-based annual drawdown rates for account-based pensions are currently: age 55-64: 4%, 65-74: 5%, 75-79: 6%, 80-84: 7%, 85-89: 9%, 90-94: 11%, 95 and over: 14% (set as a percentage of account balance).

reversion. Regular payments from commercial reverse mortgages or the HEAS are not taxed and as noted above, are exempt from the Age Pension income test.

The Australian Government also provides means-tested support for aged care services, both at home and in residential care. The family home is included in the means test for residential care support. However, if the family home is sold to finance a Refundable Accommodation Deposit (RAD) for entry into residential care, the RAD is not assessable under the Age Pension assets test.

The HEAS

The Home Equity Access Scheme (HEAS) allows eligible older Australians to obtain a voluntary, non-taxable loan from the Australian government. The program shares several features with commercial reverse mortgages. Participants can choose fortnightly payments, lump sums, or both. The loan accrues fortnightly interest and requires no repayment until the property is sold, typically at the borrower's death or on entry into residential care. Borrowers can make repayments or stop the loan payments at any time. To be eligible, individuals must be of Age Pension age, and can use real estate in Australia as collateral, including houses, apartments, farms, vacant land, commercial and retail premises, but excluding retirement villages or relocatable homes. The interest rate on the loan is set by the Minister for Social Services of Australia and has been 3.95% since 1 January 2022.

HEAS payments can be made fortnightly or as lump-sum ‘advances’. HEAS borrowers can nominate the amount for each payment type subject to several maximum payment amounts. Fortnightly payments are capped such that the total HEAS loan payments and any Age Pension payments cannot exceed 1.5 times the maximum fortnightly Age Pension rate for the household type (i.e., relevant couple or single rate). This means that a retiree on the full-Age Pension can increase their fortnightly pension payments by up to 50% with the HEAS, while a fully self-funded retiree could receive up to 150% of the maximum fortnightly Age Pension as a regular payment from the HEAS.

Lump-sum payments, described as ‘advances’, can be paid up to twice a year up to a combined cap of 50% of the maximum annual Age Pension. These advances can be taken independently of, or in addition to, fortnightly payments. The cap on total combined annual payments (both fortnightly payments and lump-sum advances) from the HEAS and the Age Pension is equivalent to 1.5 times the maximum annual Age Pension amount.

The maximum loan amount is determined by the borrower’s age and the value of the property used as security, less any outstanding mortgages or loans.[6] This amount increases with age and ranges from

[6] See: Maximum loan amount under the Home Equity Access Scheme – Services Australia.

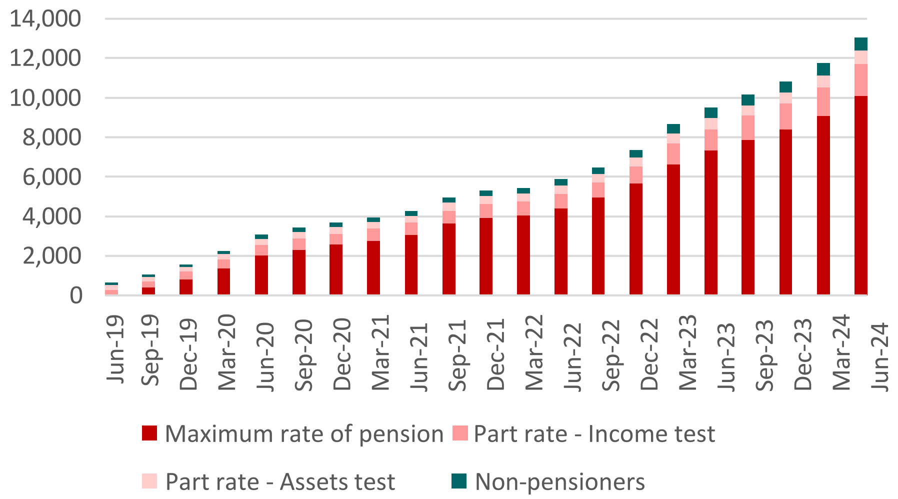
27.4% of the property value at age 67 to 67.5% at age 90 and over. Once the maximum loan amount is reached, no further HEAS payments are made. This cap helps protect the retiree's home equity for any downsizing, aged care financing or bequests.

The HEAS loan also includes a 'no negative equity guarantee' (NNEG), ensuring borrowers will never owe more than the property's value, and the government instead bears any losses if the loan value exceeds the property value at the end of the loan. The maximum loan amount on a property therefore also serves as risk management tool for the government, by protecting them against such losses.

Many of the key features of the HEAS are recent changes aimed at enhancing its appeal. Effective 1 July 2019, the maximum annual payment was increased from the maximum Age Pension amount to 1.5 times that amount, and eligibility was expanded to include self-funded retirees. In 2022, the scheme was renamed from "Pension Loans Scheme" to "Home Equity Access Scheme" (HEAS), the lump-sum payment options and the NNEG were introduced, and the interest rate was reduced from 5.25% to 3.95% where it has stayed, despite a 4.25 percentage point increase in the Australian central bank's policy rate since then. These changes, along with the commitment in the 2021-2022 Federal Budget to 'improved public messaging and branding' of the scheme, reflect government interest in expanding the scheme.

Figure 1 shows that HEAS participation has increased steadily since the recent design improvements, from 768 in June 2019 to 13,479 participants in June 2024. Most HEAS participants are on the full Age Pension (78%), followed by part-rate pensioners (17%) and self-funded retirees (5%). There is no publicly available data on how households use the scheme, including the amounts and payment types they choose. However, this number is still relatively low compared to a population of ca. Australian 3.7 million homeowners aged 65 and over.

Figure 1: HEAS participants (end of month)



Source: Own calculations from data from the Australian Department of Social Services (DSS).

3 Methodology

We develop a stochastic lifecycle model to estimate the welfare implications for retirees participating in a government-provided reverse mortgage program. We consider a range of representative household types (single/couples, with/without children, household wealth quintiles), their assets, income and eligibility for a government pension. Individuals face uncertain house prices, interest rates and investment returns, and longevity and aged care risks. They derive utility from consumption, housing, and bequests. We account for utility from housing to capture the welfare impacts of reverse mortgage use on reducing the housing equity available to fund movement into quality aged care facilities. While the model framework is general, parameters are set to reflect the Australian context described in Section 2. In Section 4, we will use the model to compare the welfare implications of HEAS participation for different payment strategies and undertake policy experiments to test alternative HEAS designs for the representative household types.

3.1 Preferences

Individuals are assumed to gain utility from housing (H) and non-housing consumption (C) based on the following Cobb-Douglas utility function:

$$U(C_t, H_t) = \frac{\left(C_t^{\eta} H_t^{1-\eta}\right)^{1-\gamma}}{1-\gamma} . \tag{1}$$

This functional form for preferences over housing and non-housing consumption is commonly used in the reverse mortgage literature (e.g., Nakajima and Telyukova, 2017; Shao et al., 2019), and related studies (e.g., Yao and Zhang, 2005; Yogo, 2016). In Equation (1), γ is the risk aversion parameter, and η is the Cobb-Douglas aggregation parameter that determines the relative importance of non-housing consumption and housing.

Non-Housing Consumption

Non-housing consumption C_t is given by:

$$C_t = \begin{cases} S_t + AP_t + FA_t + OP_t + RM_t - D_t \text{ ; single households} \\ \frac{S_t + AP_t + FA_t + OP_t + RM_t - D_t}{\psi} \text{ ; couple households} \end{cases}, \tag{2}$$

where, S_t, AP_t, FA_t,OP_t, and RM_t are income from superannuation, the Age Pension, financial and other assets, other property, and the HEAS, respectively. We define these income sources and explain their treatment in the simulations in Section 3.2. D_t is an expenditure incurred only when a household member is in an at-home disabled state. Staying at home while disabled often requires spending on products and services, including medical costs and equipment and home and lifestyle modifications. This expense does not contribute to utility like other non-housing consumption (e.g., food) but is essentially a cost to avoid residential care. We describe the estimation of D_t in Appendix A (using results from McRae et al., 2013). Finally, ψ is a consumption equivalence adjustment used to make utility comparable between single and couple households, particularly if one partner dies. A similar adjustment is used in other studies considering utility for both individual and couple households (e.g., Nakajima and Telyukova, 2017; Andréasson et al., 2017).

Housing Consumption

Housing consumption H_t is given by:

$$H_t = \begin{cases} e^{\alpha A_t} h_0 \text{ ; single, at home} \\ \frac{e^{\alpha A_t} h_0}{\psi} \text{ ; couple, at home} \\ \max\left(\frac{1}{2} h_0 E_t, 10{,}000\right) \text{ ; single, residential care} \\ \frac{\max\left(\frac{1}{2} h_0 E_t,\ 10{,}000\right)}{\psi} \text{ ; couple, residential care} \end{cases}. \tag{3}$$

Housing consumption H_t seeks to capture the utility relating to living conditions determined by home ownership. We define h_0 as the rent that would be required for the home at time 0 as our approximation of the quality of living conditions (e.g., Davidoff, 2010; Shao et al., 2019). We calculate h_0 based on the initial house price and assume a gross rental yield of 4.1%, the approximate national average around the first year of the simulation (CoreLogic, 2019). We assume the same consumption equivalence adjustment ψ for housing consumption as for non-housing consumption.

As long as the household remains in the home, they also receive an 'ageing in place benefit', modelled by $e^{\alpha A_t}$, as in Cocco and Lopes (2020). Here A_t is the number of years spent in the home, and α controls the strength of the ageing in place benefit, with $\alpha = 0$ indicating no welfare gains from ageing in place. The function can reflect preferences such as those discussed by Costa-Font et al. (2009), who found that the preference for ageing in place strengthens with age.

We assume that individuals entering residential care sell their home to finance the refundable lump-sum payment required to enter a residential care facility[7]. Housing utility is assumed to be lower in residential care, reflecting the lower standard of living and satisfaction compared to the family home. Shao et al. (2019) assume that moving into residential care halves the housing consumption of the individual. We adopt a similar approach but apply the halving only to h_0, not to the ageing in place benefit ($e^{\alpha A_t} h_0$), since the quality of residential care a household can afford is linked to their wealth rather than (perceived) ageing-in-place benefits. In addition, we multiply $\frac{1}{2}h_0$ by E_t, which is the proportion of home equity remaining at the time of sale. Use of the HEAS loan decreases the home equity available to spend on quality residential care and should therefore be captured as a decrease in the aged care housing consumption.

Less wealthy individuals can receive government subsidies for their residential care accommodation costs, implying a minimum standard for aged care housing consumption. The size of government subsidies varies and depends on means-testing, the quality of the facility and the proportion of other residents in the facility receiving government subsidies. To simplify these complexities, we assume a floor of A$10,000 per year for housing consumption in residential care based on government subsidy figures (see Appendix B for more details).

Bequest Motives

We assume that households with children obtain utility from leaving a bequest when the individual (or the last member of a couple) dies. The bequest function is given by:

$$B(W_t) = \theta \frac{W_t^{1-\gamma}}{1-\gamma}. \tag{4}$$

where W_t is the size of the bequest (net wealth at death), θ represents the strength of the bequest motive, and γ is the risk aversion parameter, as in Equation (1). A similar bequest function has been

7 That is, we model a RAD. The refunded amount refunded becomes part of the bequest, if relevant.

used in other papers considering retiree preferences over reverse mortgages (e.g., Hanewald et al., 2016; Nakajima and Telyukova, 2017; Cocco and Lopes, 2020)[8].

Expected Utility

We assume all individuals are aged 67 and their initial health state i is at home and healthy at the start of the simulation. Expected utility is given by:

$$\sum_{t=0}^{T} \beta^t E(\sum_{j\neq D} p^{ij}_{67:67+t} U(C_t, H_t) + (p^{iD}_{67:68+t} - p^{iD}_{67:67+t}) B(W_t)) , \tag{5}$$

where β is the subjective discount factor, $p^{ij}_{67:67+t}$ is the probability that an individual in initial health state i is in health state j in period t, and $(p^{iD}_{x:68+t} - p^{iD}_{67:67+t})$ is the probability that the individual dies between time t and $t+1$. We model these probabilities using a seven-state transition model that captures both health states and whether the household remains in the home or transitions to a residential care facility. Our seven-state model is developed by combining a four-state health transition model developed by Shao et al. (2015) for U.S. data with the Survey of Disability, Ageing and Carers (SDAC) data collected by the Australian Bureau of Statistics to calibrate transitions to aged care. Please refer to Appendix D.1 for more details.

For ease of interpretation and comparison of the simulation results, we convert the simulated expected utility to non-housing consumption equivalent variation (non-housing CEV). We define non-housing CEV as the fixed $x\%$ increase (each period while alive) in the non-housing consumption required in the baseline to match the expected utility of the scenario under consideration. In other words, we determine the value x that makes the expected utility in the baseline scenario equal to the scenario we are considering:

$$\sum_{t=0}^{T} \beta^t E\ (\sum_{j\neq D} p^{ij}_{67:67+t} U((1 + x\%) C_t, H_t) + (p^{iD}_{67:68+t} - p^{iD}_{67:67+t}) B(W_t)). \tag{6}$$

We choose this method of representing welfare gains or losses because it corresponds well with the retirement income focus of this paper, as the baseline non-housing consumption approximates the household's income (from superannuation, the Age Pension, financial and other assets and housing

[8] Wang et al. (2024) developed a two-generation lifecycle model with parental altruism to compare the welfare gains of bequests and early bequests (inter vivos gifts) for homeowning parents and adult children seeking to purchase their first home. Their model assumes that parents derive utility from both the child's utility in the same period and the child's expected future utility after the parent's death. Even with this assumption, Wang et al. (2024) found that parents across various wealth levels can achieve welfare gains from reverse mortgage use. However, these welfare gains are larger when parents use a (commercial) reverse mortgage for both retirement income and gifting a first home deposit to their child. In this paper, we focused on the HEAS as a means to supplement retirement income rather than providing gifts due to the relatively lower maximum annual payments from the HEAS compared to reverse mortgages.

assets, less an adjustment for at-home disability costs). These welfare gains can be interpreted as the $x\%$ increase in income per period that is required in the case without HEAS participation to attain the same utility as the scenario under consideration.

Parameterisation

Parameterisation of the utility functions is informed by relevant literature. Table 5 summarises the parameter values we use and the source literature.

Table 1: Utility parameters

Parameter	Description	Value	Source(s)
γ	Risk aversion	3	Ameriks et al. (2011)[9]
η	Cobb-Douglas weight for consumption	0.762	Nakajima and Telyukova (2017). Also used by Shao et al. (2019).
α	Ageing in place benefit	0.019	Cocco and Lopes (2020).
θ	Bequest motive strength	21	Nakajima and Telyukova (2017).[10]
β	Subjective discount factor	0.97	Cocco and Lopes (2020). 0.96 is used in Shao et al. (2019).
ψ	Consumption equivalence scale	1 single 1.41 couple	Author calculation. [11]

3.2 Representative Households

Because an important contribution of this paper is to comprehensively identify the characteristics of retiree households who benefit from the HEAS, we conduct the simulations for 20 different household types across the following demographic and household wealth dimensions:

- Household structure: either a couple or single female (x2).
- Whether the household has children or not (x2).
- Household wealth quintile (x5).

[9] The risk aversion parameter γ takes a range of values in the literature, e.g., Nakajima and Telyukova (2017) use 2, while Shao, Chen and Sherris (2019) use 5. We follow Ameriks et al. (2011), who noted two different strands of literature (one suggesting around 1.5 from pre-retirement data and the other arguing that older people are more risk-averse and use higher values), and choose 3 as a compromise value.

[10] The bequest motive strength takes a wide variety of values in the literature. Nakajima and Telyukova (2017) and Cocco and Lopes (2020) use a similar (but not identical) functional form for bequests with bequest strengths of around 21 and 13 respectively. We use a high bequest strength to demonstrate that our results hold even under stronger bequest assumptions.

[11] The value of the consumption equivalence scale ψ for couple households is calculated as the ratio of the ASFA comfortable lifestyle retirement standard for a couple household to the equivalent retirement standard for a single person household. This value is similar to the 1.34 used by Nakajima and Telyukova (2017) and 1.3 by Andréasson et al. (2017).

The household types reflect common demographic groupings used in policy discussions (e.g., Australian Treasury, 2020) and in empirical studies on home equity release (Ong et al., 2015; Moulton et al., 2017). We focus on single females rather than single males due to their longer life expectancy and lower levels of retirement income from superannuation and other sources.

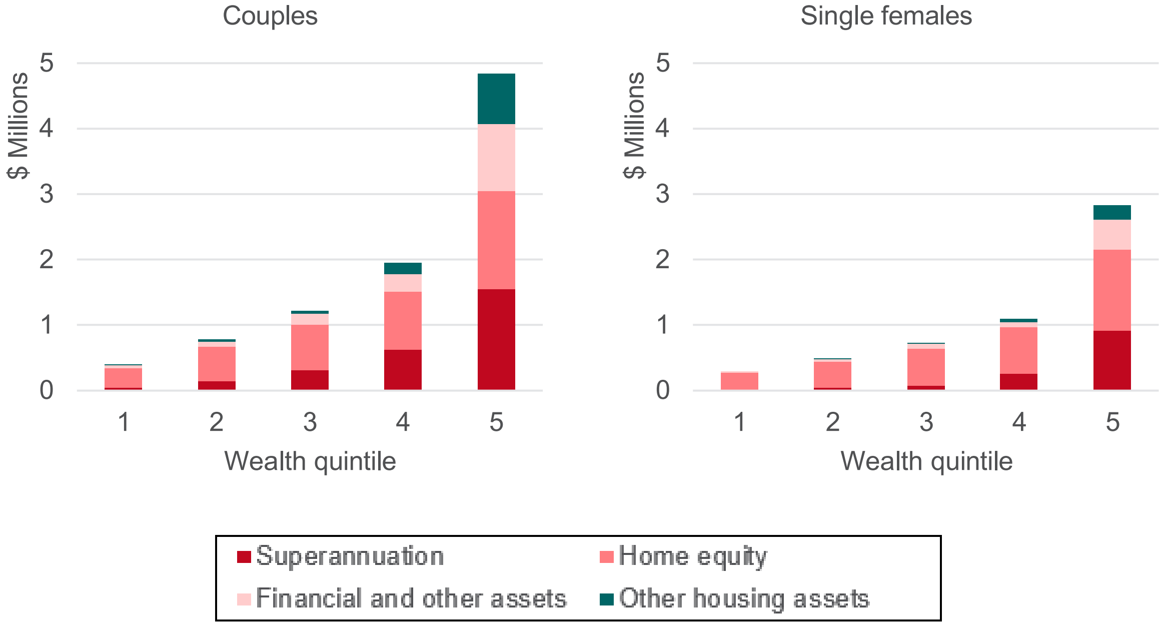
We estimate the level and composition of household wealth using data from wave 18 of the nationally representative Household, Income and Labour Dynamics in Australia (HILDA) Survey. First, we estimate total net household wealth (comprising superannuation assets, financial and other assets, home equity and other property[12]) for single female homeowners aged between 65-69 and couple homeowners where at least one partner is aged between 65-69 and at least one partner is listed as the owner of the home.[13] We then split each sample into quintiles of total net household wealth and estimate the mean values of superannuation, home equity, other property, and financial and other assets for households for each quintile. Due to small sample sizes, we do not further disaggregate by the presence of children.

Figure 2 shows the total household wealth and its composition for the representative households, which serve as inputs for the first period of our simulations. Home equity is the largest component of household wealth for nearly all representative households, comprising over 50% of net total household wealth for all except the top wealth quintile for single women and the top two wealth quintiles for couples. In the bottom wealth quintile, home equity makes up 87% of wealth for single women and 74% for couples. We also estimate from the HILDA data that the representative households have already spent 16-24 years in their home at the start of the simulation (see Appendix C).

[12] We calculate housing equity as the difference between the home's value and its associated debt. We use the housing equity figure in our calculations for the simulation (e.g., for the HEAS loan) for housing consumption.

[13] We include households where the single female or couple of interest live with others (e.g., adult children). To focus on the wealth of the individuals of interest, we use data for the individual's superannuation, bank accounts and various personal debts. Wealth components reported at the household level, such as collectables, are assumed to belong to the homeowning individual or couple of interest.

Figure 2: Composition of household wealth by wealth quintiles



Note: Based on data from Wave 18 of the Household, Income and Labour Dynamics in Australia (HILDA).

Next, we explain how the different categories of income - itemised in Equation (1) - are defined and modelled in the simulations. All households receive up to five categories of income (depending on the composition of their household wealth and participation in the HEAS) - income from superannuation (via an account-based pension), income from financial and other assets, rental income from their other property, the Age Pension (if eligible under the income and assets tests) and HEAS payments. We assume all household members are aged 67 (the Age Pension eligibility age), fully retired and meet the age and residency requirements for both the Age Pension and the HEAS.

Income from Superannuation

We assume that all singles or couples in our simulation take their superannuation as an account-based pension at retirement at age 67. This is reasonable, as 84% of retirement savings are in account-based pensions (Australian Treasury, 2023). We make the following two assumptions about the account-based pension: First, we assume retirees draw down at the minimum age-based drawdown rate, a common practice among about half of Australian retirees (Australian Treasury, 2023). The amount drawn each period is denoted as S_t . Second, we assume that the account-based pension assets are invested in a balanced investment option, similar to the default strategy used by Australia's largest superannuation fund (Australian Super) for their account-based pension. In Australia, a balanced option is typically invested 65-70% in growth assets and 30-35% in conservative assets. Returns on assets in the underlying portfolio are derived from the economic scenario generator described in Appendix D.2.

Income from Financial and Other Assets

We aggregate all assets other than superannuation and housing into the category 'financial and other assets'. This includes financial assets such as bank accounts, shares and managed funds, as well as other assets such as businesses, cars, home contents and collectables. To simplify our modelling, we treat this category as if it were entirely financial assets and apply the Age Pension deeming rules to approximate income. We assume that retirees take the income without drawing down the asset itself, consistent with observed retiree behaviour (Australian Treasury, 2020). Deeming rates under the Age Pension income test are designed to approximate interest earnings on financial assets. Hence, we assume income from financial and other assets is equivalent to the deemed interest earnings on these assets (with deemed interest rates based on a short-term interest rate – see discussion of the Age Pension below). The amount of interest income in each period is denoted by FA_t.

Rental Income from Other Property

Households in our model may also own property other than the family home (see

Figure 2). We assume that households receive rental income from these properties, calculated annually based on the property's value and a gross rental yield of 4.1% (CoreLogic, 2019). The amount of rental income received from other property each period is given by OP_t.

Age Pension

Modelling the Age Pension is a key component of retirement income modelling in the Australian context, as around 70% of eligible residents of Age Pension age receive some Age Pension (AIHW, 2023). The Age Pension is means-tested by income and assets, as described in Section 2. Given the income and asset information about the retiree household described earlier, we apply these means tests annually in our multi-period simulation to calculate the Age Pension, AP_t, a retiree household receives each year. As discussed, we aggregate financial assets and other assets into a single category. Income includes income from the assets held as well as any income from employment or overseas pensions. The value of the family home is excluded from the means tests. We assume that superannuation is taken as an account-based pension and that there is no income from employment.

As described in Section 2, the Age Pension means tests include a simplification for account-based pensions and financial assets by using 'deemed' instead of actual returns. In our model, we extend this approach to income from 'other assets'. Most aspects of the Age Pension and its means tests, including the deeming rules thresholds, are indexed regularly by law. However, the deeming rates (i.e., the interest rates designed to proxy returns on superannuation and financial assets above and below asset thresholds) are varied from time to time by the Minister for Social Services. In our simulation, we assume that the lower deeming rate (for assets below the threshold) is set at the lower of the cash rate set by the Reserve Bank of Australia and zero for each period of the simulation to proxy returns in a bank account, while the higher deeming rate (for assets above threshold) is set at the lower deeming rate plus 2% to reflect the ability of wealthier individuals to invest in riskier assets with higher returns.[14]

Income from HEAS payments

Key features of the HEAS are described in Section 2. This section describes how we model the HEAS payments, including the borrowing structure and caps. We denote amounts borrowed with the HEAS reverse mortgage as RM_t and introduce the different strategies for HEAS use in Section 4.1

We focus on households using their primary residence as security, even though other property types can be used to secure HEAS loans. This focus aligns with the paper's motivation to consider the HEAS as a method of home equity withdrawal for Australian households with large home equity and low income. In addition, with the exception of the wealthiest couples, most of our representative households do not hold substantial housing wealth outside the primary residence (see Figure 2). We also assume that households spend HEAS income rather than save or invest it. We note that HEAS payments (if spent) and the owner-occupied primary residence are exempt from the Age Pension means tests.

HEAS income and lump sum advances are subject to three different caps defining the borrowing structure. These caps are described in Equations (8) to (10), where 'maximum Age Pension' refers to the maximum (single/couple) payment the household would be eligible for where income and assets are below the relevant thresholds, while 'Age Pension payment' refers to the means-tested Age Pension payment that the HEAS borrower currently receives.

$$\text{Fortnightly (HEAS payment} + \text{Age Pension payment)} \leq 1.5 \times \text{Fortnightly maximum Age Pension} \quad (8)$$

$$\text{Lump sum advances} \leq 0.5 \times \text{Annual maximum Age Pension}$$

$$\text{Annual (HEAS payments} + \text{Age Pension payment)} \leq 1.5 \times \text{Annual maximum Age Pension} \quad (9)$$

[14] The latter assumption is based on recent differences between the high and low deeming rates (from 2019 to present) and is reasonably close to the average difference of about 1.7% over the past 25 years (own calculations from DSS, 2021b).

$$\text{Maximum outstanding loan balance} = \text{Age component} \times \frac{\text{Property Value (rounded down to nearest 10,000)}}{10{,}000} \quad (10)$$

Equation (8) describes the caps on the different individual payment types. Equation (9) limits the total annual borrowing. Equation (10) gives the maximum outstanding loan balance (also known as maximum loan amount) for a HEAS loan, determined as a function of age and the outstanding loan balance. We re-calculate this each year in accordance with increasing age and changes in house prices. Once the maximum loan amount is reached, no further payments are made. While there is a small fee (in the range of a few hundred dollars) at set-up and conclusion, which varies between Australian states, we abstract from any loan costs. The loan accrues interest at an annual rate of 3.95%, compounding fortnightly; we also conduct a sensitivity analysis with a significantly higher interest rate. We assume no HEAS repayments until the property is sold (in our model, upon the death of the household or entry into a residential care facility).

3.3 Simulations

Using the model framework and assumptions described above, we conduct simulations to estimate the welfare implications from HEAS participation for the 20 representative households for a range of HEAS payment strategies and policy design experiments. Our model includes two stochastic components: a seven-state health transition model, which simulates health states (including death), aged care costs and transitions from the home to residential care (see Appendix D.1), and an economic scenario generator, which simulates economic and financial variables, including house prices (see Appendix D.2). We simulate 5,000 paths for both the health transition model and the economic scenario generator from 2019 to 2052, assuming an initial age of 67 at the start of 2019 and a maximum age of 100 at the start of 2052. We assume that all events and financial transactions (e.g., drawdown of income from superannuation, entry to residential care, death) occur at the beginning of the year. Unless otherwise stated, all dollar values in this analysis are in 2019 A$, and our modelling reflects the current institutional settings for the HEAS, the Age Pension and superannuation.

4 Results

In this section, we first analyse the welfare effects of HEAS use across different home equity access strategies for the representative households described in Section 3.2. We then analyse two policy experiments for alternative HEAS design, followed by sensitivity analysis and discussion.

4.1. Main Results

We begin by analysing the welfare gains from HEAS participation for the representative households. Our utility framework evaluates the welfare implications of HEAS use on annual consumption, considering ageing in place benefits, bequests and aged care needs. We consider four HEAS strategies under the current policy setting, assuming HEAS payments are received as long as possible, subject to the maximum loan amount. Since our model frequency is annual, there is no numerical difference between fortnightly HEAS payments and lump sum advances.

We consider the following strategies[15]:

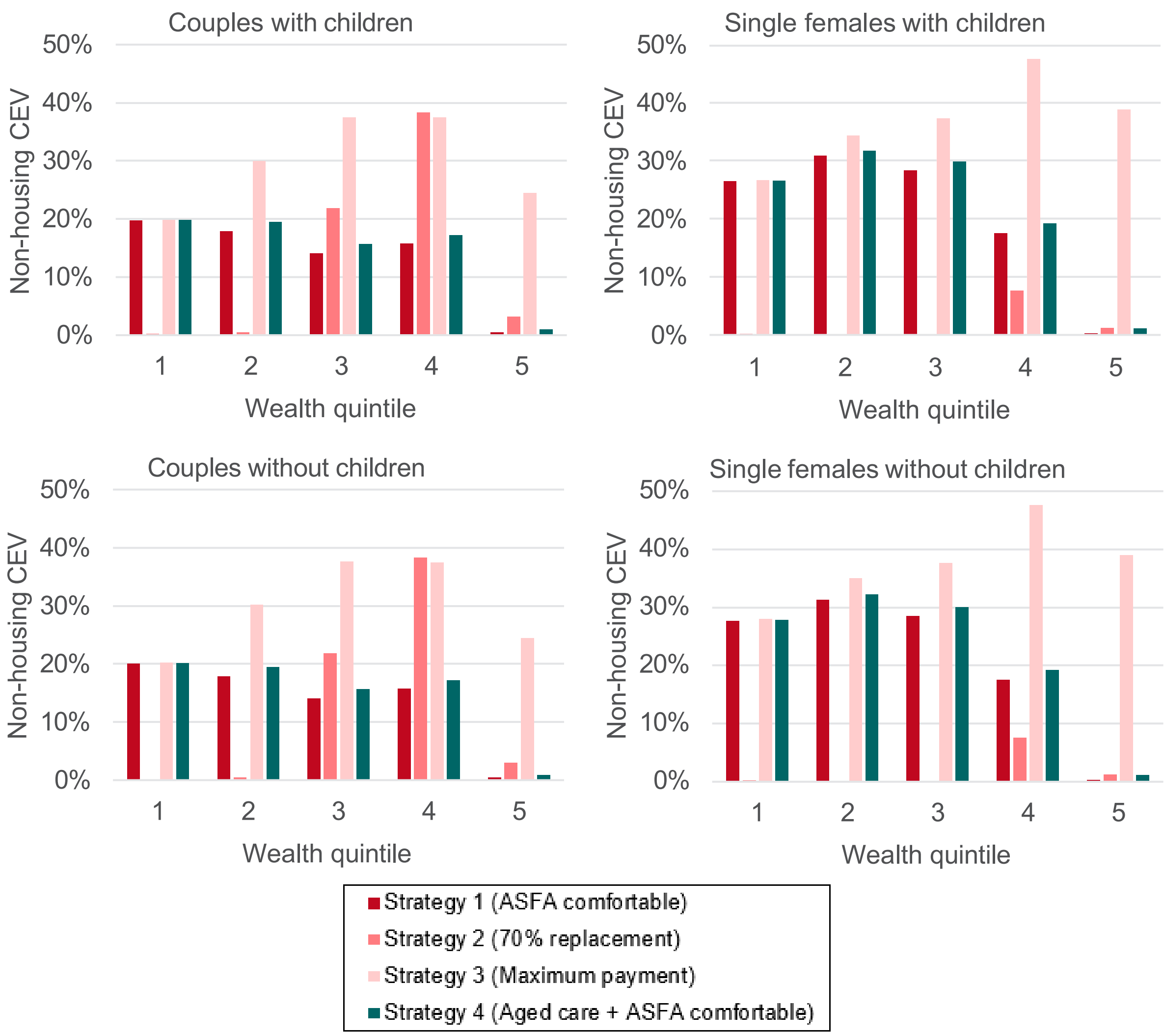
- **Strategy 1 (ASFA comfortable):** The household borrows fortnightly HEAS payments such that the combined income (from superannuation, financial and other assets, other property, the Age Pension and the HEAS) is as close as possible to the CPI-indexed ASFA Retirement Standard for a comfortable lifestyle, within HEAS payment and loan limits (see Section 2).[16]
- **Strategy 2 (70% replacement):** The household borrows fortnightly HEAS payments such that the combined retirement income (from superannuation, financial and other assets, other property, the Age Pension and the HEAS) is as close as possible to a 70% income replacement rate, in line with international benchmarks and Australian government recommendations (Australian Treasury, 2020, p. 18-19). Appendix C explains how we estimate the pre-retirement income for households in different wealth quintiles from HILDA data.
- **Strategy 3 (Maximum payment):** The household borrows their maximum allowable fortnightly HEAS payments. The maximum HEAS payment is 1.5 times the maximum Age Pension, less any Age Pension payments received (see Section 2.
- **Strategy 4 (Aged care + ASFA comfortable):** The household borrows a lump-sum HEAS payment when the individual, or at least one partner in the household, becomes mildly disabled or severely disabled (while continuing to live in the family home) to cover additional health-related expenditures (see Appendix D.1. for a description of health states). In addition, the household borrows fortnightly payments to as close as possible reach the ASFA Retirement Standard for a comfortable lifestyle.

[15] The four strategies assume households begin using the HEAS at the start of retirement, at age 67. This assumption is informed by Koo et al. (2022), who studied the optimal use and timing of the HEAS in its 2019 setting. Their findings suggest that asset-rich and cash-poor households should optimally borrow the maximum amount of 1.5 times the full Age Pension entitlement immediately upon retiring at 65 (the pension age at the time).
[16] We use the budget standard for those aged 65-85 for the entire simulation (including for those aged over 85).

Figure 3 shows the welfare implications of HEAS use under each of the four strategies for the 20 representative households. We measure welfare gains using the non-housing consumption equivalent variation (CEV) compared to the baseline without HEAS use, as explained in Section 3.1. A positive CEV represents a welfare gain from HEAS participation, with higher positive values indicating higher welfare gains.

Figure 3 suggests that all 20 representative retiree household types can achieve positive welfare gains by participating in the HEAS, which suggests that the HEAS is a welfare-improving approach to funding retirement income. However, the extent of these welfare gains varies by household type and HEAS strategy.

Figure 3*:* Welfare effects of different HEAS strategies for different household types



Note: Welfare gains are measured as non-housing consumption equivalent variation (CEV); see Section 3.1.

Figure 3 also shows that, of the strategies considered, Strategy 3 (taking maximum annual HEAS payments) gives the largest welfare gains for 18 of the 20 household types. The welfare gains from Strategy 3 range from 19.8% to 37.4% of non-housing CEV for couples with children and 26.6% to 47.5% for single females with children. The values for households without children are slightly higher. Households in middle wealth quintiles see the largest welfare gains from Strategy 3, as less wealthy households often have higher Age Pension payments and lower initial housing equity, limiting their ability to borrow from HEAS [17] , while wealthier households already have substantial retirement incomes.

The remaining strategies for HEAS use (1, 2, and 4) also provide positive welfare gains for most households, albeit smaller than those under Strategy 3. An exception is Strategy 2, which targets a 70% income replacement rate and is the preferred strategy for relatively wealthy couples in wealth quintile 4 (with and without children), resulting in slightly higher utility gains than Strategy 3. In this case, regular HEAS payments are lower than the maximum in Strategy 3 but continue for longer before reaching the maximum loan amount limit and tend to preserve more home equity for residential care costs and bequests. For other household types, Strategy 2 results in minimal or no gains for most household types, as less wealthy households can often reach a 70% income replacement rate without using the HEAS due to their relatively low pre-retirement income, while wealthier households have other income sources which already bring them close to this replacement rate.

Across different strategies, welfare gains from the HEAS tend to be larger for single women, who, on average, have lower wealth and income than couples (see Figure 2). The results for households with and without children are relatively similar for both couples and single women, for several reasons. First, future bequests are discounted. Additionally, for less wealthy households with low baseline retirement income, increases in non-housing consumption due to HEAS payments lead to welfare gains that far outweigh decreases in bequest size due HEAS repayment. In contrast, middle- and upper-income households experience only a limited decrease in the size of their bequest, as their wealth includes other wealth categories such as superannuation, financial assets, and other housing equity. Furthermore, the HEAS loan amount limits protect a portion of housing equity. For instance, couple households across all wealth quintiles have roughly 60% of their housing equity left over at the end of the loan, while single female households retain between 60 to 70%. However, a stronger bequest motive reduces welfare gains from the HEAS, as shown in our sensitivity analysis in Section 4, where

[17] Recall Equations (8) and (10) – the annual maximum amount that can be borrowed from the HEAS is 1.5 times the maximum Age Pension rate (couple or single), less any Age Pension payments, while the maximum loan amount increases with higher housing equity.

we vary the bequest motive strength and observe smaller welfare gains, particularly among less wealthy households.

Overall, these main results suggest that HEAS participation can significantly improve welfare for retiree households, especially when maximising annual HEAS payments. The gains are most pronounced for single women and households in the middle wealth quintiles.

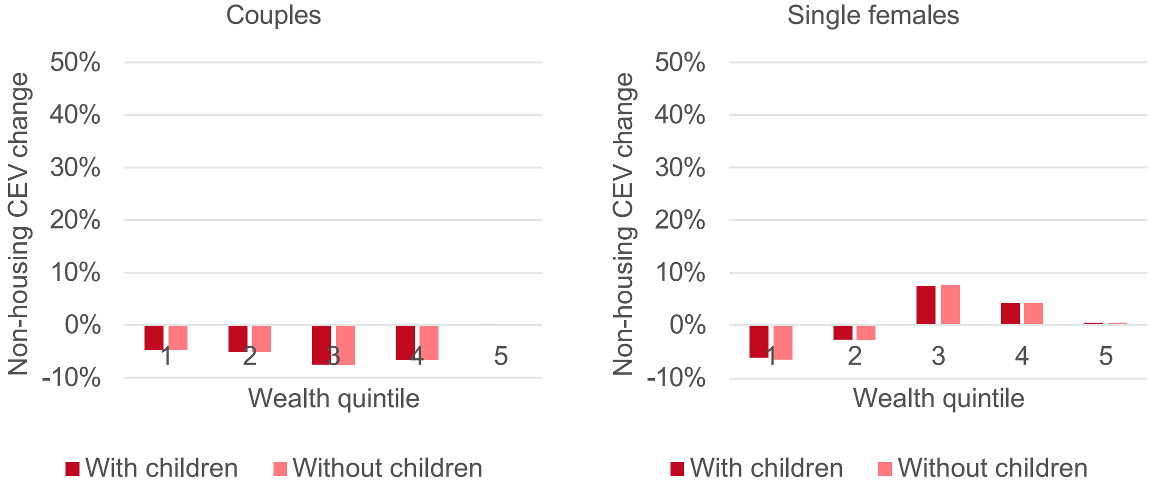
4.2 Policy Experiment: Higher HEAS Payments

The main results in the previous subsection suggested that many Australian retiree households could achieve substantial welfare gains by choosing to receive maximum HEAS payments. In this subsection, we explore whether increasing the permitted fortnightly and annual maximum HEAS payments could further enhance these welfare gains and improve the scheme's overall attractiveness of the HEAS. Specifically, we conduct a policy experiment to determine whether increasing the cap on combined HEAS and Age Pension payments from 1.5 times to 2 times the maximum Age Pension can further increase retiree welfare.

Figure 4 shows the non-housing CEV percentage point change when increasing the maximum HEAS payment (Strategy 3) from the current 1.5 times to the proposed 2 times design (assuming no change in the maximum loan amount). The results indicate that single female households in wealth quintiles 3-4 experience the largest welfare gains under this policy experiment. However, many other households see minimal welfare changes or even reductions, particularly couple households in wealth quintiles 1-4 and single females in the lowest wealth quintile. These results underscore a trade-off: higher regular HEAS payments allow for more consumption earlier in retirement but lead to a shorter payment period, as the maximum loan cap is reached sooner. Our results suggest that many households would prefer to receive lower regular HEAS payments (at the current maximums) over a longer duration, rather than higher payments that end sooner.

To better understand the results of the policy experiment, Figure 5 presents the proportion of simulations (from 5,000 paths) in which the household cannot achieve the maximum annual payment under Strategy 3, assuming the current 1.5 times payment limits. This could involve either reducing or terminating HEAS payments because the maximum loan amount has been exceeded. We also show the proportion of simulations where households are still at home (rather than in residential care or deceased).

Figure 4: Policy experiment: Higher HEAS payments



Note: This figure measures welfare effects as percentage point changes in the non-housing consumption equivalent variation (CEV, defined in Section 3.1). Households are assumed to choose maximum HEAS payments (Strategy 3).

Figure 5: Proportion of simulations where maximum HEAS payment is not achieved

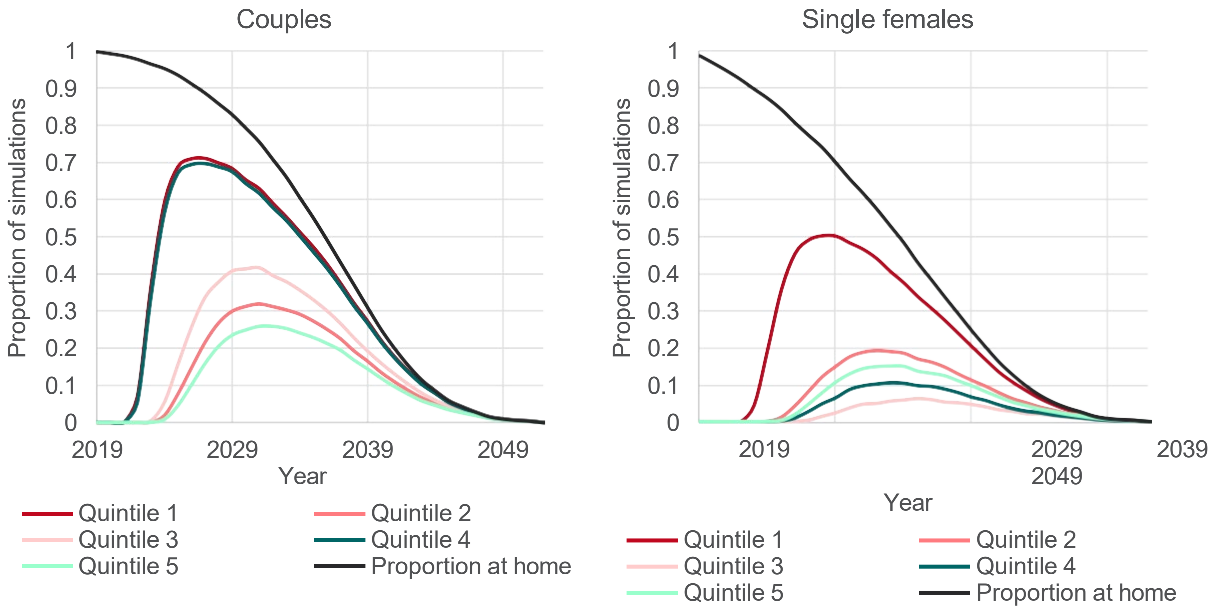


Figure 5 shows that single female households in wealth quintiles 3 and 4 are less likely than other representative households to reach the maximum loan amount, meaning they often have 'spare' home equity when receiving payments at the current HEAS maximum. This allows them to consume more now without significant reductions in later consumption, explaining their welfare gains under the policy experiment.

In contrast, other households frequently reach their maximum loan amount earlier when taking maximum payments under the current design, indicating limited 'spare' home equity. This includes households in the bottom wealth quintile (due to their low housing equity) and couples in quintile 4, who receive higher HEAS payments due to lower Age Pension payments but, unlike couples in the wealthiest quintile, lack sufficient home equity to support higher payments for lengthy periods. These households do not receive welfare gains under the policy experiment.

Overall, Figure 4 and Figure 5 show how the maximum HEAS payment size and the amount of housing equity determine whether households can benefit from higher payments under the policy experiment without significant decreases in later consumption. For many households, limited 'spare' housing equity results in substantial utility loss from reduced later consumption when receiving higher HEAS maximum payments compared to receiving maximums in the current structure.

Given these findings, another potential policy experiment could involve raising the maximum loan cap alongside the allowable HEAS payment limit. However, this change would increase the government's exposure to losses if a HEAS loan exceeds property value. Raising the cap would likely require a higher HEAS interest rate to manage this added risk, adding complexity to the analysis and offering an interesting direction for future research on the trade-offs between loan limits, interest rates, and welfare outcomes. While policy adjustments to the loan cap may be constrained by the government's current risk tolerance, our model remains useful for Australian policymakers considering HEAS refinements and for international policymakers setting limits on similar programs.

4.3. Sensitivity Analysis

We now test the robustness of our main results reported in Section 4.1 by varying three key components of the simulation model: the HEAS interest rate, the strength of the bequest motive, and house price growth.

Higher HEAS Interest Rate

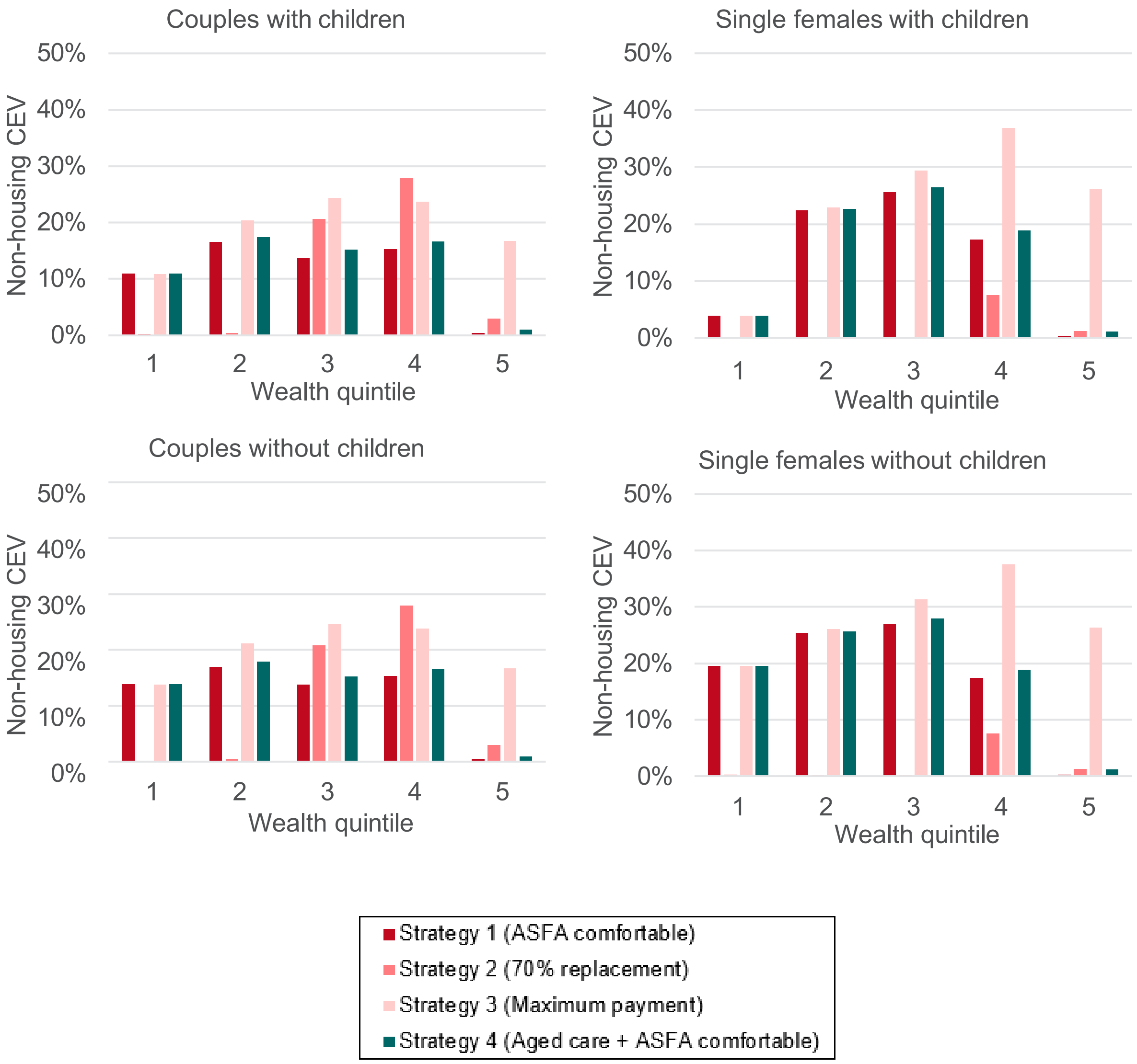
To generate the main results, we have used the current HEAS interest rate of 3.95%. In the second sensitivity analysis, we study the welfare implications of HEAS use with a significantly higher interest rate of 10%, which approximates current commercial reverse mortgage rates[18].

[18] As of October 2024, reverse mortgage interest rates of leading lenders in Australia were 9.75% (Heartland Reverse Mortgages), 9.2% (Household Capital), and 9.25% (Gateway Bank).

A higher HEAS interest rate tends to shorten the duration for which a household can receive HEAS payments before reaching the maximum outstanding balance cap and reduces the amount of remaining housing equity at the end of the loan.

The corresponding results, shown in Figure 6, show that all 20 representative retiree households can still achieve positive welfare gains by participating in the HEAS with 10% interest rates.

Figure 6: Welfare effects for different strategies: HEAS interest rate of 10%



Note: Welfare gains are measured as non-housing consumption equivalent variation (CEV); see Section 3.1.

However, the welfare gains compared to the baseline without HEAS use tend to lower because higher HEAS interest rates result in higher outstanding loan balances, which limit further borrowing and reduce bequests. The differences in welfare gains are largest for Strategy 3, which involves maximum HEAS payments. Still, Strategy 3 is again the preferred strategy for 15 out of 20 households, with welfare gains ranging from 10.9% to 24.3% (compared to 19.8% to 37.4% in the main results shown in Figure 3) of non-housing CEV for couples with children and 3.9% to 36.9% (compared to 26.6% to 47.5%) for single females with children.

Overall, the results of this sensitivity analysis suggest that the current low HEAS interest rates, compared to commercial reverse mortgage rates, provide substantial welfare gains to Australian retirees.

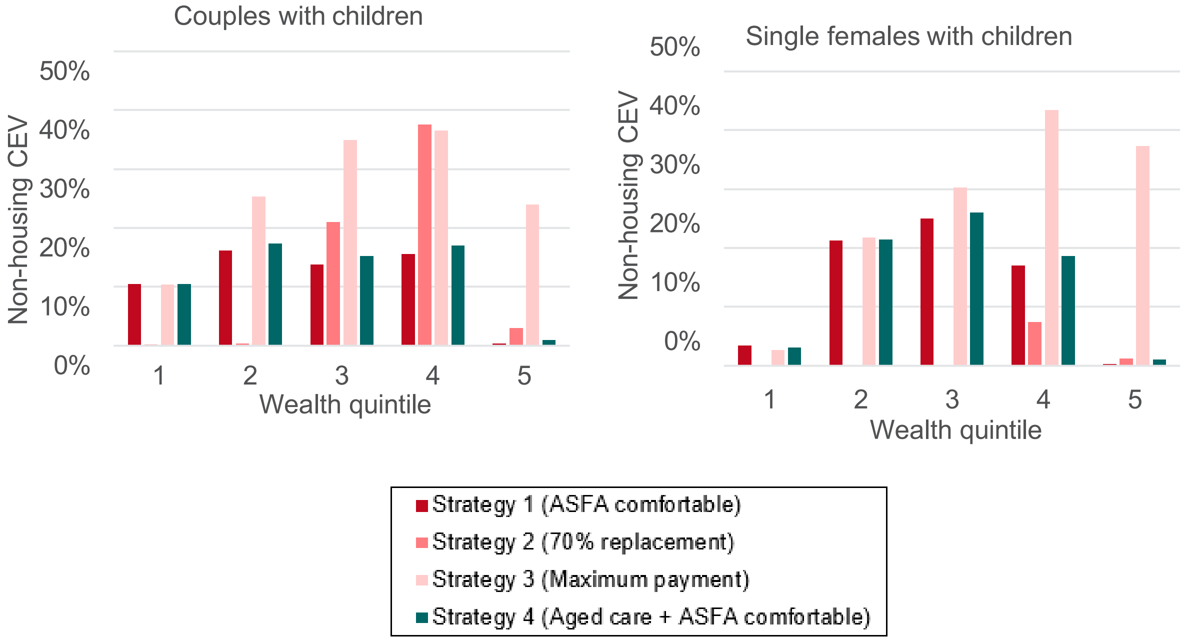
Stronger Bequest Motive

Next, we increase the bequest motive strength from 21 to 500 (i.e. $\theta = 500$), representing a bequest motive strength that is around 25 times higher than our main results. This change only affects households with children. Figure 7 shows that HEAS participation still results in positive welfare gains for couples and single females with children, with maximum HEAS payments (Strategy 3) remaining the preferred strategy for most households (16 of 20 households).

However, as expected, a stronger bequest motive reduces the welfare gains from the HEAS across all strategies for households with children compared to the main results. The decreases in non-housing CEV tend to be larger for households in lower wealth quintiles than for wealthier households. This is because wealthier households own significant wealth across all asset classes (housing, financial and superannuation) to leave as bequests; even after using the HEAS, they can still leave substantial bequests. In contrast, the use of the HEAS represents a greater proportional reduction in the bequests that less wealthy households can leave.

We note that our paper assumes a standard bequest utility function based on net wealth at death (see Equation (4)). Alternative utility functions that account for parental altruism may give larger welfare gains if the parents use a reverse mortgage for both retirement income and early bequests (inter vivos gifts) (see Wang et al., 2024).

Figure 7: Welfare effects for different strategies: Stronger bequest motive



Note: Welfare gains are measured as non-housing consumption equivalent variation (CEV); see Section 3.1.

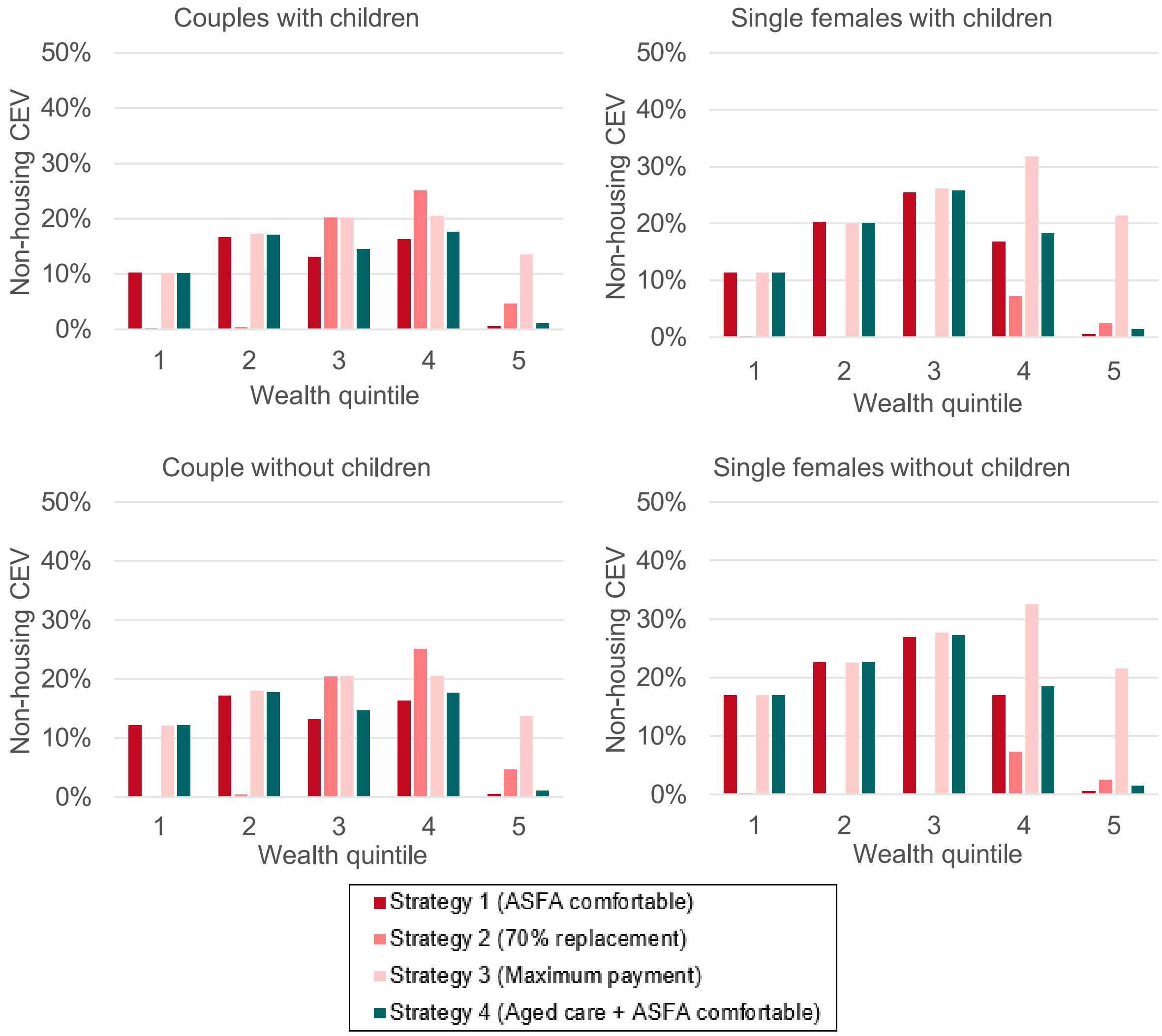
Zero House Price Growth

To generate our main results, we used an economic scenario generator model (see Appendix D.2) to simulate house prices and other economic variables. To assess the impact of house price growth, we now consider a case where house price growth is zero in every period (i.e. $h = 0$), while the remaining economic variables are still generated by the economic scenario generator.

Assuming zero house price growth has a number of countervailing implications for retiree welfare in our model. Firstly, it may reduce welfare gains compared to our main results via a reduction in housing equity, which affects HEAS payments and the amount of home equity left for bequests and aged care. However, zero house price growth also decreases the value of superannuation balances, as we assume the investment strategy of superannuation assets includes property (see Appendix D.2), and this, in turn, tends to reduce the household's baseline income from superannuation. As such, increases in income from the HEAS should represent larger welfare gains than in our main results. Complicating this further, the reduction in superannuation may increase the means-tested Age Pension received and decrease HEAS payments.

Figure 8 reports the corresponding welfare gains for Strategies 1-4. It shows that all 20 representative retiree households can still achieve positive welfare gains by participating in the HEAS with zero house price growth, although the gains tend to be smaller than those in the main results shown in Figure 3, suggesting that the effect of lower home equity on welfare gains dominates other potential effects discussed. For example, the welfare gains from Strategy 3 now range from 10.2% to 20.4% (compared to 19.8% to 37.4% in the main results) of non-housing CEV for couples with children and 11.4% to 31.8% (compared to 26.6% to 47.5%) for single females with children.

Figure 8: Welfare effects for different strategies: Zero house price growth



Note: Welfare gains are measured as non-housing consumption equivalent variation (CEV); see Section 3.1.

The zero house price growth assumption also impacts the preferred HEAS strategies for some households. Strategy 3 now provides the largest welfare gains for 12 (compared to 18 in the main results) of the 20 household types. Strategy 1 (ASFA comfortable) is now the preferred strategy for six less wealthy households (single females in the lowest two wealth quintiles and couples in the lowest wealth quintile). This shift is largely due to the lower housing equity, which limits how long these households can maintain maximum HEAS payments before reaching the maximum loan amount and the impact on bequest (as relevant).[19] However, it is important to note that the welfare differences between Strategy 1 and Strategy 3 are small.

5 Conclusion

In this paper, we investigated how different methods of using the HEAS impact the welfare of representative retiree households. We developed a new stochastic lifecycle model that incorporates financial, aged care, and longevity risks while accounting for means-tested public pensions, private pensions, relevant taxes, and other government policies. The model was calibrated using data from the nationally representative HILDA survey. Our findings indicate that HEAS participation can significantly improve welfare for retiree households, especially when maximising annual HEAS payments. The gains are most pronounced for single women and households in the middle wealth quintiles.

Our analysis also included a policy experiment that increased the maximum fortnightly and annual HEAS payments. The results suggest that most households would prefer to receive lower regular HEAS payments (at the current maximums) for a longer period rather than higher payments that end sooner. Sensitivity analyses showed that the current low HEAS interest rates, set at 3.95%, compared to commercial reverse mortgage rates, offer substantial welfare gains to Australian retirees. However, as expected, a stronger bequest motive reduces welfare gains for households with children across all strategies. Additional sensitivity tests show that even under a zero house price growth scenario, all 20 representative retiree households achieve positive welfare gains through HEAS participation, though these gains are generally lower than in the main results.

The welfare gains we estimate for various Australian retiree households contrast with the relatively low take-up rates of the HEAS, which had only 13,479 participants as of June 2024 (Figure 1). This low participation is surprising given that the HEAS design addresses several potential psychological

[19] There is no impact on aged care, as all of these households were below the aged care housing consumption floor at baseline and hence aged care housing consumption is equal to the minimum standard in both baseline and all studied strategies.

and behavioural barriers to reverse mortgage demand. For example, the HEAS is government-provided, which may help alleviate concerns about trust in financial services, and it frames payments as a percentage of the Age Pension, which could help retirees perceive the HEAS as supplemental income rather than debt. The scheme also reduces distribution barriers as individuals can apply via Services Australia, the same agency that administers the Age Pension. One likely explanation for low uptake is a lack of awareness of the scheme and its features. The HEAS is not widely advertised, and the relevant regulator (the Australian Securities and Investments Commission, ASIC) only clarified only in early 2023 that financial advisers can advise on the scheme without requiring an Australian Credit Licence. Behavioural factors such as debt aversion and a preference to retain home equity for inheritance may also deter participation. Additionally, the (perceived) complexity of the scheme could be a barrier, particularly for retirees with limited financial literacy.

Overall, our study provides a modelling framework and findings that can inform both academic research and policy development on public reverse mortgage schemes. Our model considers the role of housing wealth in funding retirement income, bequests and aged care, offering a framework for future retirement studies in Australia and internationally. Future research could adapt the model to other contexts or evaluate the effectiveness of strategies to improve awareness and understanding of equity release programs such as the HEAS.

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