Funding Retirement with Public Reverse Mortgages: An Evaluation of Australia's Home Equity Access Scheme

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Introduction

Aim: **We evaluate the Home Equity Access Scheme (HEAS), an Australian government-offered reverse mortgage designed to help supplement retirement income.**

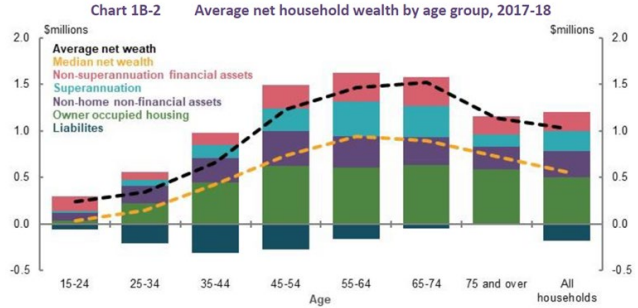
Summary: **We construct a multi-period simulation model with financial uncertainty and health and longevity risks (including movement to aged care facilities), and use this model to consider welfare gains from HEAS use across various household structures and wealth levels.**

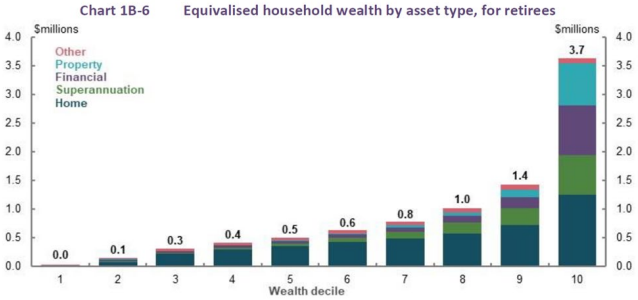
- Compare welfare gains/losses for different HEAS strategies for different household types
- Explore how HEAS design can be improved to increase potential welfare gains
- Compare model results against HEAS data from industry partner Pension Boost

Motivation

Retirement Income Review (Australian Treasury, 2020):

- *For most households aged 65 and over, the **family home is their largest asset***
- *The family home is a greater proportion of lower-income than higher-income earners' wealth*
- *Accessing equity in the home can **significantly boost retirement incomes** without the need for additional contributions*
- *Using relatively small portions of home equity can substantially **improve retirement incomes***
- *Releasing home equity can boost retirement incomes with a **modest impact on debt***



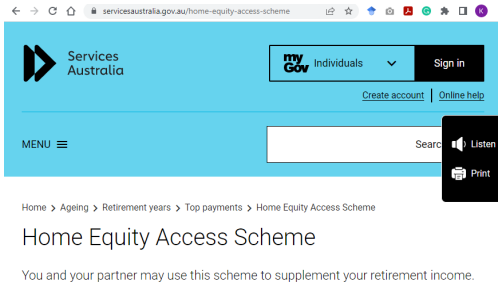


Source: Australian Treasury (2020)

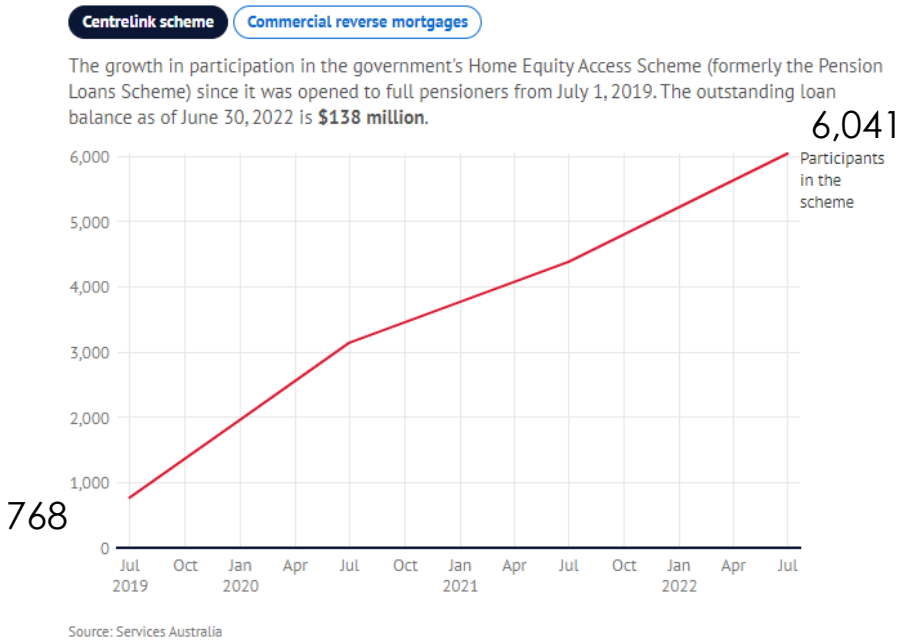
Home Equity Access Scheme (HEAS)

- A government-provided reverse mortgage program
- Open to property-owning Australians above Age Pension Age (currently 66.5 years)
- Allows older Australians to receive a government loan to supplement their retirement income
- Regular fortnightly payments or lump sum advances
  - Fortnightly payment + public pension payments ≤ 1.5 max. fortnightly Age Pension
  - Lump-sum advances: up to twice a year, up to a total of 0.5 max. annual Age Pension
- HEAS payments accrue as a debt secured against real estate the person owns
  - Family home, investment property, farmland
- Participants can stay in their family home and do not have to repay the loan while living there
- Debt is recovered when the property is sold or from the person's estate
- Allows retirees to continue to age in place
- Interest rate: 3.95% (p.a., compounded fortnightly)

- NNEG
- Max. outstanding loan balance related to property value and age



Recent policy changes to the HEAS



Source: Sydney Morning Herald, August 7, 2022, https://www.smh.com.au/money/borrowing/soaring-number-of-older-home-owners-take-out-government-backed-reverse-mortgages-20220727-p5b536.html

1 Jul 2019:

- Scheme opened to all property-owning Australians of pension age
- Max. amount increased to 150% Age Pension

1 Jan 2020: Interest rate cut (from 5.25% to 4.50%)

1 Jan 2022:

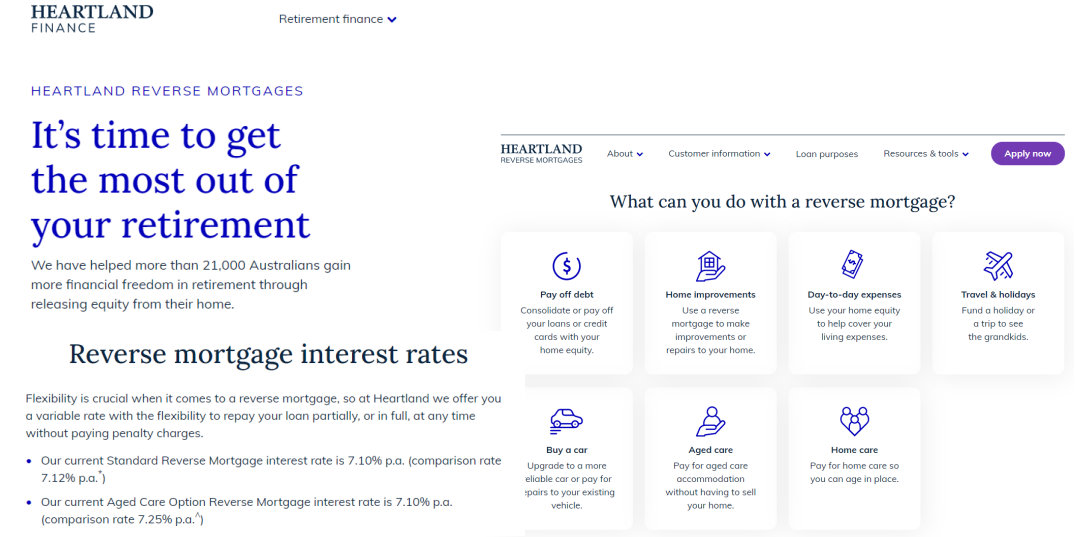
- Rebranding to Home Equity Access Scheme
- Interest rate cut (from 4.50% to 3.95%)
- 'improved public messaging and branding'

1 Jul 2022:

- Two lump sums p/y
  - Max. $12,558 p/y (single)
  - Max. $18,962 p/y (couple)
- No Negative Equity Guarantee

Alternatives to the HEAS

- Downsizing
- Line of credit/offset
- Home reversion
- Commercial reverse mortgages



This study

We develop a multi-period simulation model to estimate welfare gains from using the HEAS for a range of representative household types and strategies

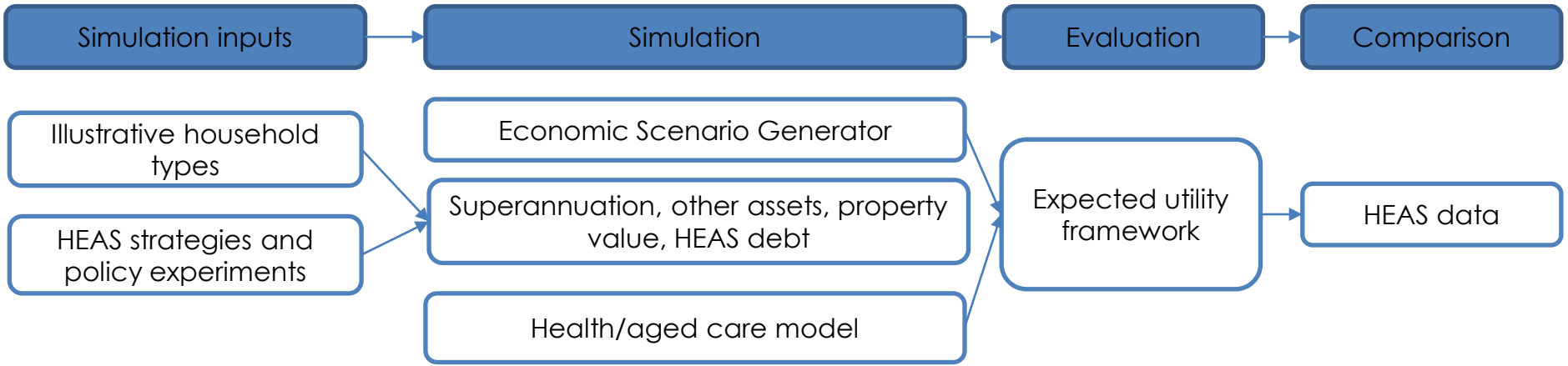
- Model considers financial uncertainty, long-term care risk and longevity risks
- Compare welfare gains/losses for different HEAS strategies for different household types
- Explore how HEAS design can be improved to increase potential welfare gains
- Compare model results against HEAS data from industry partner Pension Boost

Contribution to academic literature:

- Most previous studies focus on the U.S. HECM program (e.g., Nakajima and Telyukova, 2017; Cocco and Lopes, 2020)
- Two previous studies analyse the Australian HEAS (Koo et al., 2022, Lamarra et al., 2022)
  - We consider recent program changes & policy experiments
  - We consider movement into aged care

Methodology

We develop a **multi-period simulation model** to estimate welfare gains for a range of **illustrative households** in different **policy scenarios**.



Illustrative Households

- We model **single and couple homeowners**
- All household members are assumed to be eligible for the Age Pension and HEAS, and are aged 67 at the beginning of the simulation.
- **20 different household types** with **wealth** from **superannuation**, **housing** and **other assets**:
  - Couple or single female (x2)
  - With or without children (x2)
  - Wealth quintile (x5)
- Households receive **income** from **superannuation**, **other assets**, the **Age Pension** and the **HEAS**

HEAS Strategies and Policy Experiments

HEAS Strategies

- **Strategy 1 (ASFA standard)** – use HEAS such that the combined income from superannuation, other assets, the Age Pension and the HEAS reaches the Association of Superannuation Funds of Australia (ASFA) comfortable lifestyle budget for the household type
- **Strategy 2 (70% replacement)** – use HEAS such that the combined income from superannuation, other assets, the Age Pension and the HEAS reaches a 70% income replacement rate
- **Strategy 3 (maximum payment)** – receiving the maximum amount from the HEAS annually.
- **Strategy 4 (lump sums + ASFA)** – use lump-sum payments to cover aged care expenditures + fortnightly payments to support an ASFA comfortable lifestyle

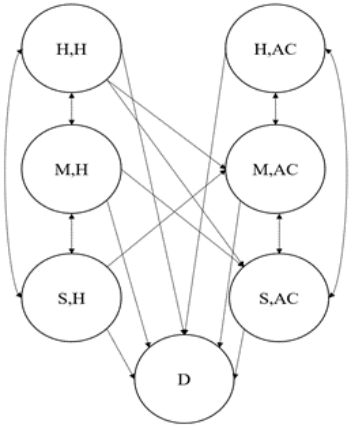
Policy Experiments

- **Policy Experiment 1 (4.5% interest rate)** – was the HEAS rate 01/2020 – 12/2021
- **Policy Experiment 2 (increasing fortnightly/annual maximum)** – increasing the fortnightly and annual cap on combined HEAS and Age Pension payments from 1.5 times the maximum Age Pension to 1.75 times and 2 times the maximum Age Pension.

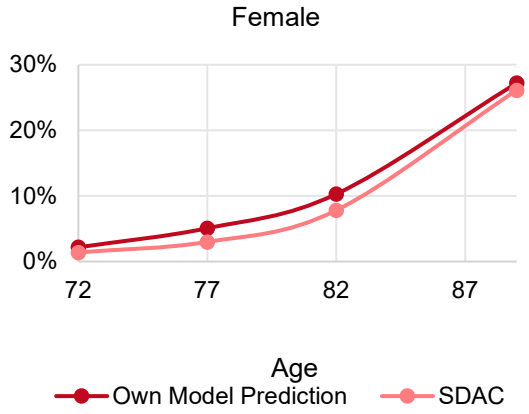
Simulations

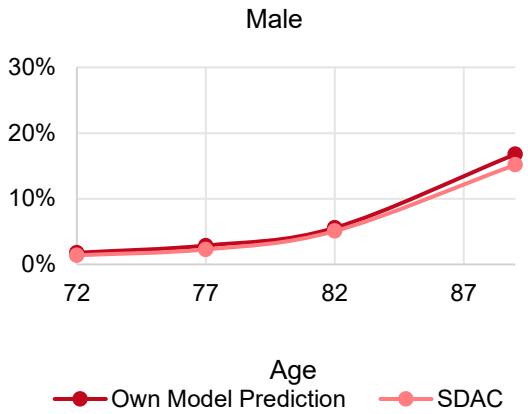
A. Health/aged care model:

- 7-state Markov model (healthy, mildly/severely disabled at home/in nursing home, dead)
  - Extension of Shao et al. (2015): 4 → 7 states, applied to Australian data (SDAC)
- Apply the model to singles and couples to simulate household states



Proportion in Aged Care Facilities (of those alive)





Simulations

B. Economic Scenario Generator:

- Simulation of Uncertainty for Pension Analysis (SUPA) model from Chen et al. (2021)
- Calibrated on Australian data from 1992-2018 and includes house prices
- Simulate inflation, wage growth, house price growth and equity returns

Simulate 5,000 paths for components A. and B. from 2019-2052 (ages 67 to 100)

- Assume events (e.g., withdraw income, disability, movement to aged care) occur at beginning of year
- All household members dead by the end of the simulation

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Institute and Faculty of Actuaries

PAPER

Using a stochastic economic scenario generator to analyse uncertain superannuation and retirement outcomes

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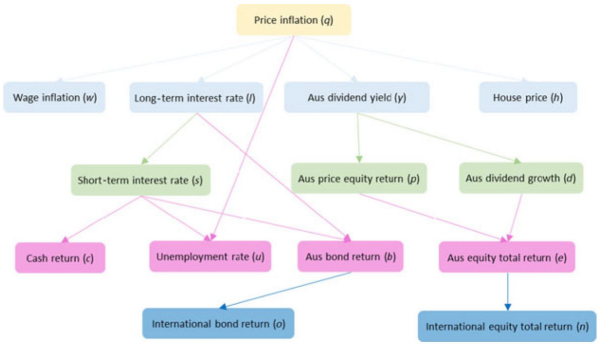


Figure 1. Cascade structure of the SUPA model with 14 variables.

Expected Utility Framework

- Period utility: $U(C_t, H_t) = \frac{\left(C_t^{\eta} H_t^{1-\eta}\right)^{1-\gamma}}{1-\gamma}$
- Housing and non-housing consumption:

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

$$H_t = \begin{cases} e^{\alpha A_t} h_0 \text{ ; single household, at home} \\ \max(\frac{1}{2} h_0 \times E_t, 10{,}000) \text{ ; single household, aged care} \\ \frac{e^{\alpha A_t} h_0}{\psi} \text{ ; couple household, at home} \\ \frac{\max(\frac{1}{2} h_0 \times E_t, \ 10{,}000)}{\psi} \text{ ; couple household, aged care} \end{cases}$$

- Bequest: $U(B_t) = b\frac{(B_t + \kappa)^{1-\gamma}}{1-\gamma}$

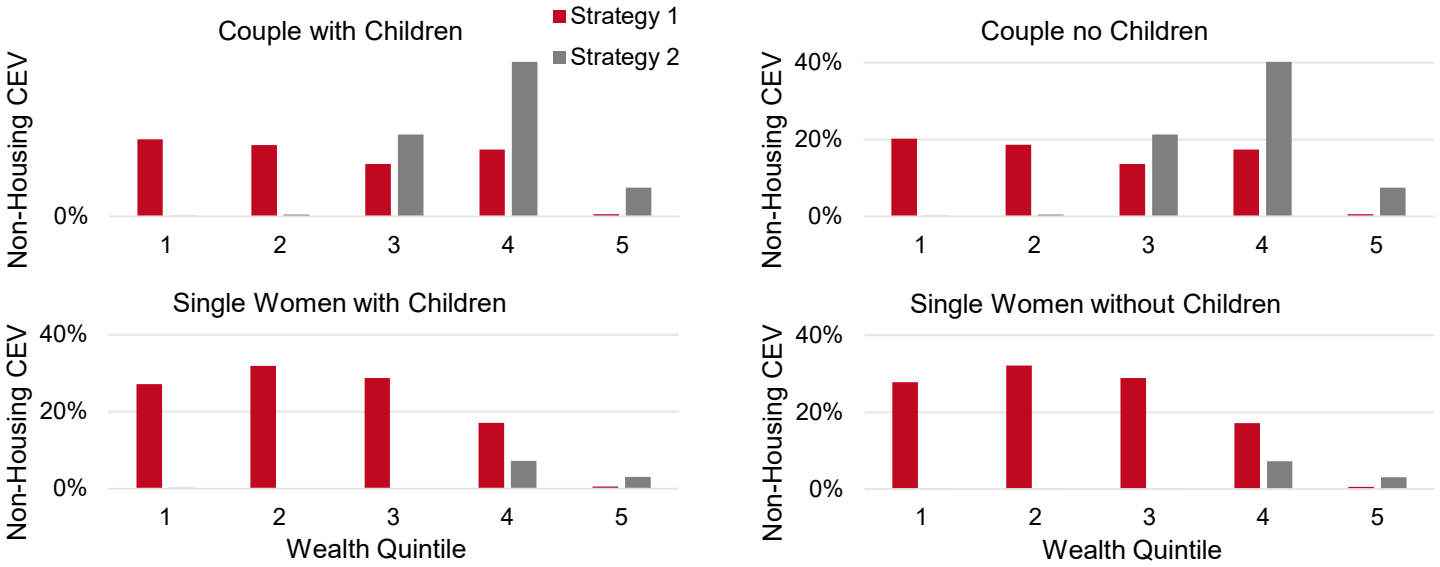
- Calculate expected utility (EU)
- Convert EU to **non-housing consumption equivalent variation (non-housing CEV)**
  - Fixed x% increase (each period while alive) in the non-housing consumption required in the baseline in order for the expected utility to be the same as for the scenario under consideration

Results – HEAS strategies

CEV compared to baseline without HEAS

Strategy 1 (ASFA standard): welfare gains for wealth quintiles 1-4; higher gains for women

Strategy 2 (70% replacement): welfare gains for wealthier households

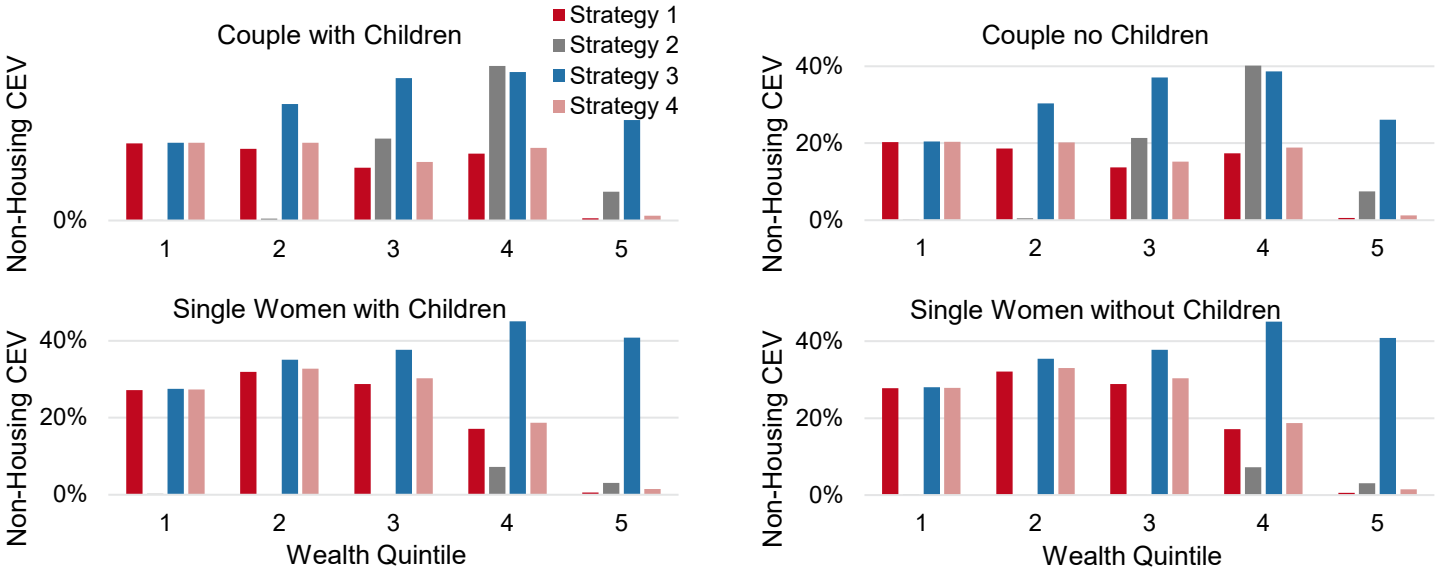


Results – HEAS strategies

CEV compared to baseline without HEAS

Strategy 3 (max. payment): highest welfare gains for most households

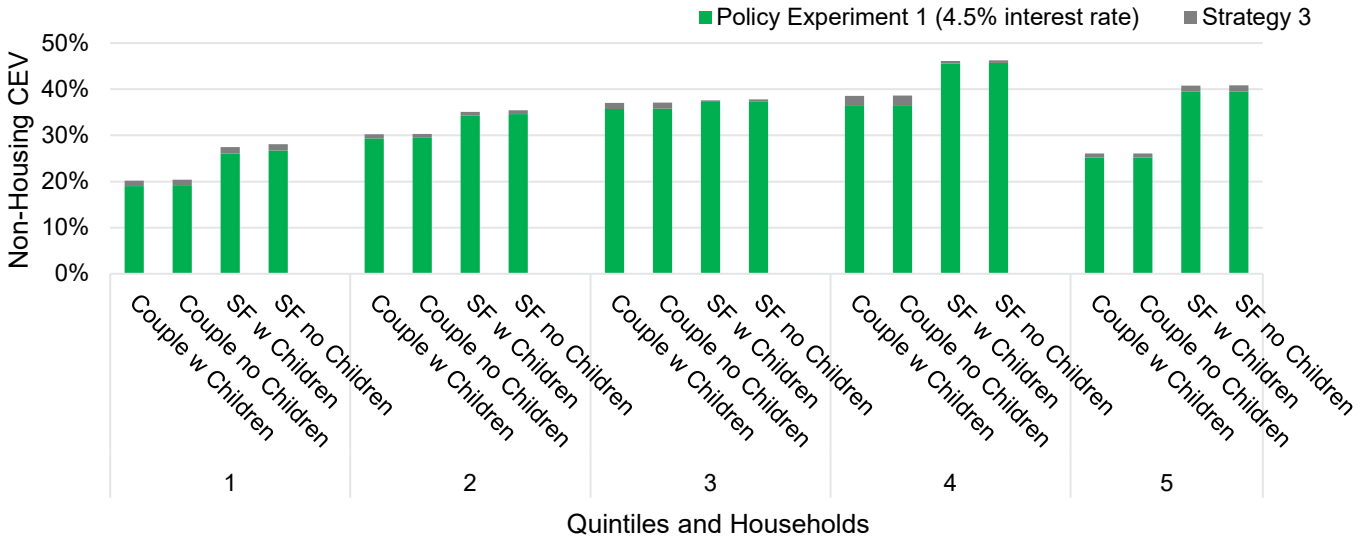
Strategy 4 (lump sums + ASFA): welfare gains for most households (especially wealth quintiles 1-4)



Policy Experiments

Policy Experiment 1: 4.5% interest rate (instead of 3.95%), assume **Strategy 3 (maximum)**

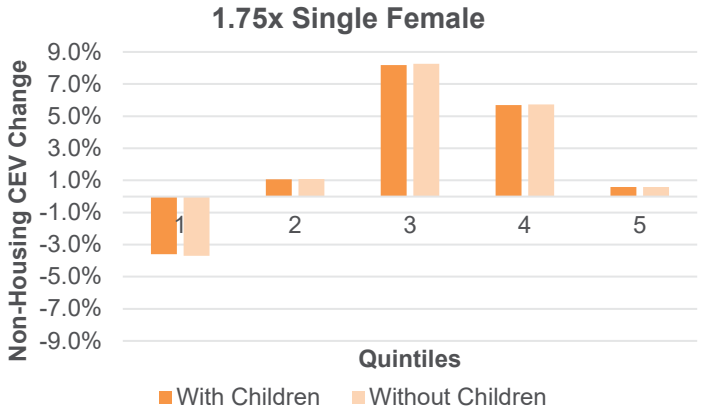
- Welfare gains for all households from lower interest rates
- Reason: Households can receive HEAS payments longer and enjoy higher bequest



Policy Experiments

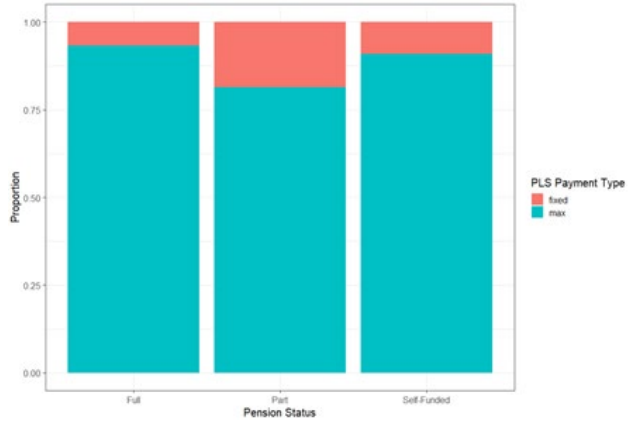
Policy Experiment 2: **increasing fortnightly/annual maximum** – increasing the fortnightly and annual cap on combined HEAS and Age Pension payments from 1.5 times the maximum Age Pension to 1.75 times and 2 times, assume **Strategy 3 (maximum)**

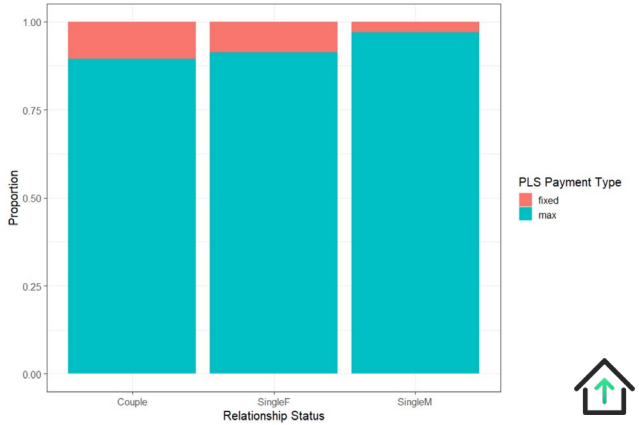
- Welfare losses for couples in Q1-4, welfare gains for single females in Q2-5
- Reason: Outstanding balance cap



HEAS Data

- Data set provided by Pension Boost Pty Ltd.: 379 loans (580 participants)
- **Many different household types** (couples vs single, wealth levels) use the HEAS, though **pensioners are over-represented among HEAS participants** (compared to general population over 65)
- **91% of loans receive the maximum HEAS amount.** Remaining 9% are on fixed payments.





PENSION BOOST

Conclusions

Key Results:

- HEAS is a **welfare-improving method** of allowing retiree households to improve their retirement income
- Newly introduced **lump-sum advances: welfare-enhancing** method of covering unexpected health costs
- Most households **should choose to receive maximum payments** from the HEAS
  - Consistent with actual HEAS loan data

Policy experiments:

- **Interest rate reductions result in welfare gains**
  - Implications for private providers: crowding out?
- **Increasing fortnightly/annual maximum: welfare gains** for single females
  - Increase outstanding balance cap to ensure benefits for all households

Thank you!

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