

# Postcode-Level Reverse Mortgages

Longevity Risks, House Price Risks, and Welfare Gain

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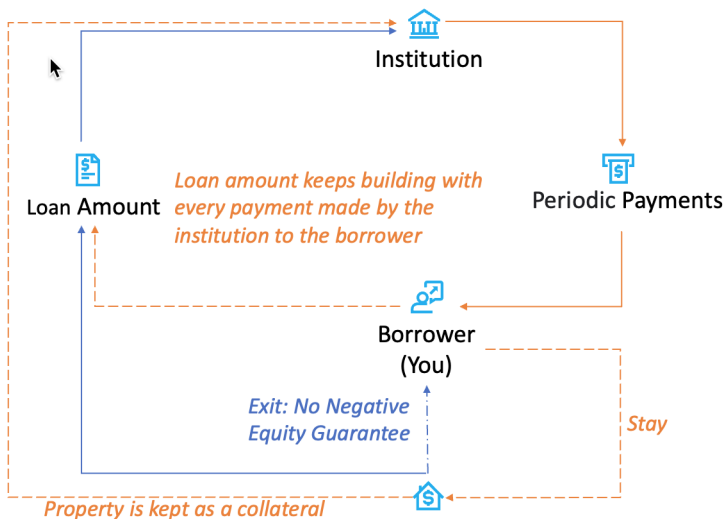
Risk & Actuarial, UNSW

18 July, 2023

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# What is a reverse mortgage?



# Background

- The Home Equity Access Scheme (HEAS) is an optional program designed for older Australians, allowing senior citizens in Australia to obtain a voluntary loan secured by their home equity.
- The limited size of the reverse mortgage market can be attributed to low borrower demand ([Haurin and Moulton, 2017](#)).
- Certain homeowners prefer to unlock the equity in their homes by downsizing rather than using reverse mortgages ([Australian Housing and Urban Research Institute, 2019](#)).

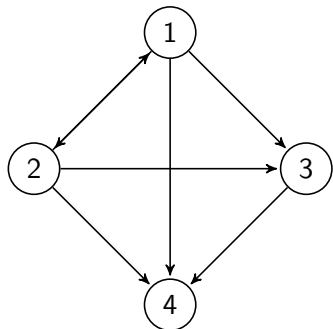
# Introduction

- A utility-based approach is employed to compare HEAS with downsizing options, allowing changes in utility gained from:
  - Nondurable goods
  - Home equity
  - Bequeathed wealth
- The impact of changing residence on elderly migrants in relation to geographical variations in house prices and longevity is considered.
- Various factors in the Australian context are considered:
  - Means tests
  - Health expenditures
  - Taxes

## Mortality (Finkelstein et al., 2021)

Relocating from a suburb with a lower life expectancy to a suburb with a higher life expectancy has the potential to enhance one's overall lifespan.

## Health Expenditures - Dependent on the Health States (Xu et al., 2023)



- ① Healthy
- ② Mildly disabled
- ③ Severely disabled
- ④ Dead

# Home Equity Access Scheme (HEAS)

## Two Restrictions

- Periodic: The sum of HEAS and pension disbursements should not surpass 1.5 times the Maximum Pension Rate.
- Total: The total loan amount of HEAS must be smaller than the Maximum Loan Amount.

## Uncertainty of HEAS

- The Maximum Pension Rate is expected to be adjusted according to Consumer Price Index.
- The Maximum Loan Amount is influenced by the house price and the Age Component increasing with age until 90.

# HEAS: Predicted Outstanding Balance and Payment

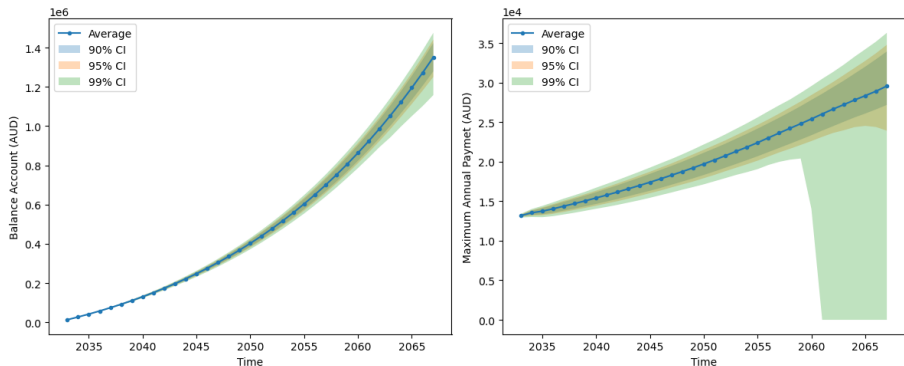
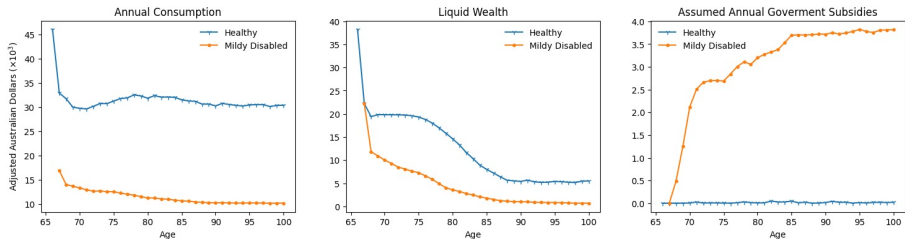


Figure: The predicted outstanding balance and the maximum annual withdrawal for a HEAS user starting at age 66.

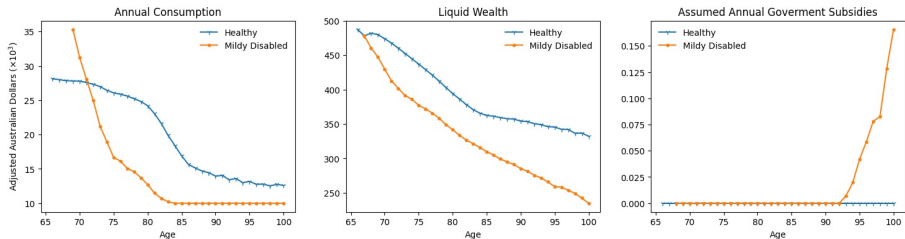
- HEAS users may reach a point where they are unable to withdraw any additional funds later in life.



# HEAS Enhances Healthy Ageing I



(a) HEAS



(b) Downsizing

# HEAS Enhances Healthy Ageing II

- Healthy individuals who utilise HEAS generally exhibit a higher average consumption level compared to their healthy counterparts who opted for downsizing.
- In the case of mildly disabled retirees, downsizing their home equity tends to result in increased consumption right after retirement. However, this group also reaches the lowest level of consumption earlier than their counterparts who are HEAS users.

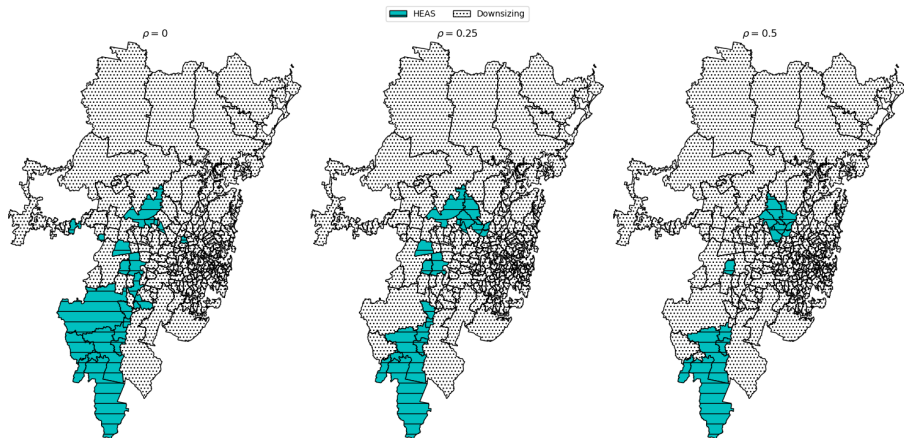
# Profiles of Retirees Opting for HEAS

Scenarios	Bequest $b$			Expenditure Share $\theta$			Intertemporal Substitution $\sigma$		
	$b$	$\theta$	$\sigma$	$b$	$\theta$	$\sigma$	$b$	$\theta$	$\sigma$
Case 1	0, 6, 12, 18	0.7	1/3	12	0.5, 0.6, 0.7, 0.8	1/3	12	0.7	1/5, 1/4, 1/3
Case 2	0, 6, 12	0.7	1/3	12	0.5, 0.6, 0.7, 0.8	1/3	12	0.7	1/5, 1/4, 1/3
Case 3	0, 6, 12	0.7	1/3	12	0.5, 0.6, 0.7	1/3	12	0.7	1/4, 1/3
Case 4	0	0.7	1/3	12	0.5	1/3	12	0.7	-

$b \in \{0, 6, 12, 18, 24\}$ ;  $\theta \in \{0.5, 0.6, 0.7, 0.8, 0.9\}$ ;  $\sigma \in \{1/5, 1/4, 1/3, 1/2, 2/3\}$ .

- In all scenarios, retirees share the commonality of having similar total wealth at the time of retirement. The ratios of home equity to cash on hand decrease from case 1 to case 4.
- HEAS user profile:
  - asset-rich & cash-poor (Case 1)
  - have lower motivations to bequeath ( $b \downarrow$ ), derive greater satisfaction from residing in spacious homes ( $\theta \downarrow$ ), and prioritise long-term benefits over immediate gratification ( $\sigma \downarrow$ )

# Demand Analysis at the Postcode Level: Greater Sydney I



# Demand Analysis at the Postcode Level: Greater Sydney II

- When lifespan changes are not considered ( $\rho = 0$ ), retirees in HEAS-preferred suburbs have less cash on hand, large home equity size, moderate housing prices, and high projected housing price growth.
- As lifespan consideration increases, some suburbs with lower life expectancy shift from being HEAS-preferred to downsizing-preferred. Retirees moving to suburbs with higher life expectancies can increase their lifespan and lower future health-related expenditures.
- A few suburbs shift from being downsizing-preferred to HEAS-preferred due to increased medical cost risk in moving to areas with lower life expectancy.

## Conclusion and Discussion

- HEAS can enhance consumption levels for both healthy and mildly disabled retirees, as compared to homeowners opting for downsizing.
- HEAS is more appealing to individuals who have a low bequest motive, exhibit a high degree of risk aversion, and stand to gain more from the consumption of home equity.
- This research confirms a propensity for individuals characterised as "cash-poor, asset-rich" to select HEAS.
- The spatial disparities in housing prices and life expectancy can limit the demand for HEAS.
- The assumption that government subsidies are consistently available enhances the demand for HEAS, suggesting that the actual demand can be less pronounced.

## Acknowledgement

This research utilised house price index data from CoreLogic, wealth data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey conducted by the Melbourne Institute, and mortality, life expectancy, and home size data from the Australian Bureau of Statistics (ABS).

## References

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## Appendix I: Age Component increasing with age

Table: Age Component Amount

<b>Age</b>	<b>Component Amount</b>	<b>Age</b>	<b>Component Amount</b>
60	AUD 2,080	75	AUD 3,750
61	AUD 2,160	76	AUD 3,900
62	AUD 2,250	77	AUD 4,050
63	AUD 2,340	78	AUD 4,210
64	AUD 2,430	79	AUD 4,380
65	AUD 2,530	80	AUD 4,560
66	AUD 2,630	81	AUD 4,740
67	AUD 2,740	82	AUD 4,930
68	AUD 2,850	83	AUD 5,130
69	AUD 2,960	84	AUD 5,330
70	AUD 3,080	85	AUD 5,550
71	AUD 3,200	86	AUD 5,770
72	AUD 3,330	87	AUD 6,000
73	AUD 3,460	88	AUD 6,240
74	AUD 3,600	89	AUD 6,490
		90+	AUD 6,750

## Appendix II: Calibrated Parameters

Table: Baseline Scenario

<b>Description</b>	<b>Value</b>
Housing expenditure rate	0.01
Rental yield rate	0.03
Average wealth	AUD 40,000
Average home size	193m <sup>2</sup>
Average house price	AUD 881,200
Nominal HEAS rate	3.95%
Transaction costs rate for a seller	1%
Transaction costs rate for a buyer	3%
Health expenditure: Healthy	AUD 5,000
Health expenditure: Mildly disabled	AUD 30,000
Health expenditure: Severely disabled	AUD 60,000