

# “The effect of intergenerational wealth transfers on transitioning the housing ladder.”

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# Introduction

- Benefits from homeownership-
  - greatest store of wealth- fourth pillar of retirement income,
  - positive well-being outcomes- life satisfaction, social capital
  - positive well-being outcomes for children
- Housing Affordability- Major concern- particularly for first homebuyers.
- Deposit is the most significant hurdle for first homebuyers.
- As a result, the role of intergenerational transfers is receiving increased attention- Bank of Mum and Dad.

# Current Research

- Two significant gaps in the literature
  1. Renting vs Owning- combining mortgagors and outright owners;
    - reduces the significance of mortgage debt,
    - different demographics- notably age.
  2. Intergenerational transfers are recorded as a binary variable usually around the Au\$10k threshold.
    - Doesn't allow for variation in effect compared to a continuous variable.

# Intergenerational Wealth Transfers

- Two types of transfers:
- *Inter vivos* transfers (parental transfers)- timed transfer
  - Mean \$10,700
  - Mean age 32
- Bequests (inheritance)- randomly timed transfer
  - Mean \$112,400
  - Mean age 49

# Housing Tenure Status

## 1. Renters

- Mean age **38**
- 27.1%

## 2. Mortgagors

- Mean age **44**
- 40.2%

## 3. Outright owners

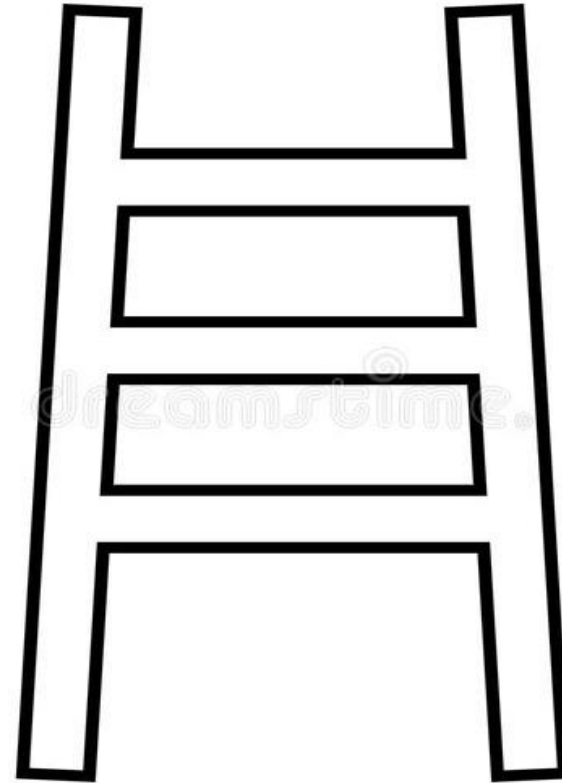
- Mean age **60**
- 32.7%

# Housing Tenure Ladder- Housing Equity

Outright Owner

Mortgagor

Renter



# Hypotheses

- Hypothesis 1: “The probability of transitioning from renting to mortgaging or outright owning increases as the intergenerational wealth transfer increases.”
- Hypothesis 2: “The probability of transitioning from mortgaging to outright owning increases as the intergenerational wealth transfer increases while the probability of transitioning from mortgaging to renting decreases as the intergenerational wealth transfer increases.”
- Hypothesis 3: “The probability of transitioning from outright owning to mortgaging or renting decreases as the intergenerational wealth transfer increases.”

# HILDA Data & Key Variables

- Household Income Labour Dynamics Australia longitudinal survey provided the panel data.
- Intergenerational transfers- variables of interest
  - quadratic form to allow for non-linear effect as the transfers vary
  - naturally logged as the transfers exhibit broad variations
- Standard control variables.



# Multinomial logit model

- $y_{m,i,t}^* = \mathbf{X}_{i,t}\beta_{\mathbf{X},m} + dp_{i,t}\beta_{dp,m} + p_{i,t}\beta_{p1,m} + p_{i,t}^2\beta_{p2,m} + p_{i,t}^3\beta_{p3,m} + db_{i,t}\beta_{db,m} + b_{i,t}\beta_{b1,m} + b_{i,t}^2\beta_{b2,m} + b_{i,t}^3\beta_{b3,m} + u_{i,t}$
- $y_{m,i,t}^*$  is latent dependent variable housing tenure taking  $m$  (3) categories,
- $\mathbf{X}_{i,t}$  is a vector of observed strictly exogenous variables,
- $dp_{i,t}$  is the parental transfer dummy variable at \$0 threshold,
- $db_{i,t}$  is the inheritance dummy variables at \$0 threshold,
- $p_{i,t}$  is the continuous parental transfer variable,
- $b_{i,t}$  is the continuous inheritance variable and
- $u_{i,t}$  is the error term.

# Estimation

- The sample is framed into 3 subsamples:
  - Renters at time t-1 to test hypothesis 1- 39,482 observations.
  - Mortgagors at time t-1 to test hypothesis 2- 70,057 observations.
  - Outright owners at time t-1 to test hypothesis 3- 51,923 observations.
- By estimating the multinomial logit model for each subsample group, it allowed for the examination of transitioning into the three housing tenure categories in the subsequent period.
- Therefore, there are nine possible transitions- three for each model.
- Each model is estimated using the tenure status exhibiting no transition as the reference case e.g. remaining a renter, remaining a mortgagor etc. so two sets of beta coefficients are estimated for each model

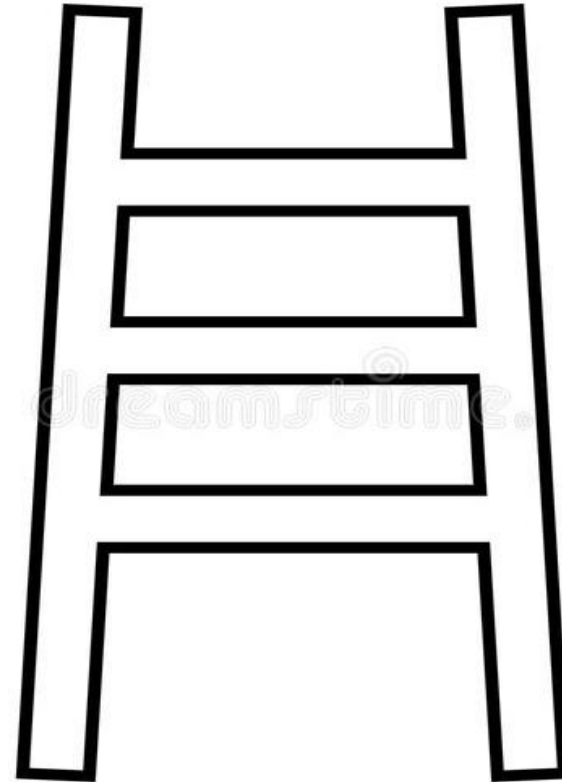
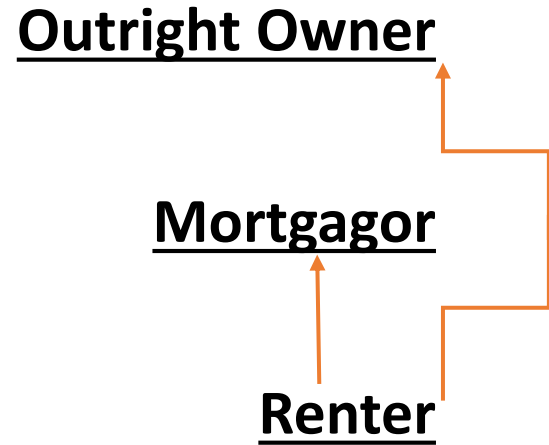
# Multinomial logit output

	Renter time t-1		Mortgagor time t-1		Outright Owner time t-1	
	Transition to Mortgagor	Transition to Outright Owner	Transition to Renter	Transition to Outright Owner	Transition to Renter	Transition to Mortgagor
	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)
parental transfer	<b>-6.473***</b> (1.772)	2.451 (5.513)	4.159 (3.000)	2.333 (3.151)	2.708 (9.199)	6.156 (4.937)
parental transfer <sup>2</sup>	<b>0.793***</b> (0.215)	-0.310 (0.653)	-0.543 (0.370)	-0.244 (0.371)	-0.471 (1.118)	-0.690 (0.559)
parental transfer <sup>3</sup>	<b>-0.029***</b> (0.008)	0.013 (0.025)	0.022 (0.015)	0.008 (0.014)	0.022 (0.044)	0.026 (.021)
parental transfer dummy \$0	<b>15.759***</b> (4.709)	-6.393 (15.041)	-9.328 (7.852)	-7.183 (8.655)	-2.454 (24.642)	-17.906 (14.178)
Inheritance	-2.061 (2.425)	-6.407 (4.408)	-4.405 (3.930)	-1.179 (2.325)	<b>-12.271**</b> (6.039)	<b>-8.354**</b> (3.488)
inheritance <sup>2</sup>	0.200 (0.264)	0.560 (0.490)	0.379 (0.446)	0.0672 (0.244)	1.185* (0.666)	<b>0.734**</b> (0.343)
inheritance <sup>3</sup>	-0.005 (0.009)	-0.015 (0.018)	-0.010 (0.016)	0.000 (0.008)	-0.037 (0.024)	-0.020* (0.0110)
Inheritance dummy \$0	5.994 (7.363)	22.410* (12.786)	15.524 (11.146)	4.834 (7.219)	<b>42.235**</b> (17.815)	<b>29.737***</b> (11.579)

# Odds ratio and coefficient significance

- The results are expressed as odds ratios calculated by exponentiating the sum of the transfer coefficients.
- Parental transfers
  - $\exp(\beta_{dp,m} + \beta_{p1,m} + \beta_{p2,m} + \beta_{p3,m})$
- Inheritance
  - $\exp(\beta_{db,m} + \beta_{b1,m} + \beta_{b2,m} + \beta_{b3,m})$
- This allows the odds ratios to vary non-linearly as the transfer increases.
- The joint coefficient significance is tested using a joint Wald test.

# Hypothesis 1

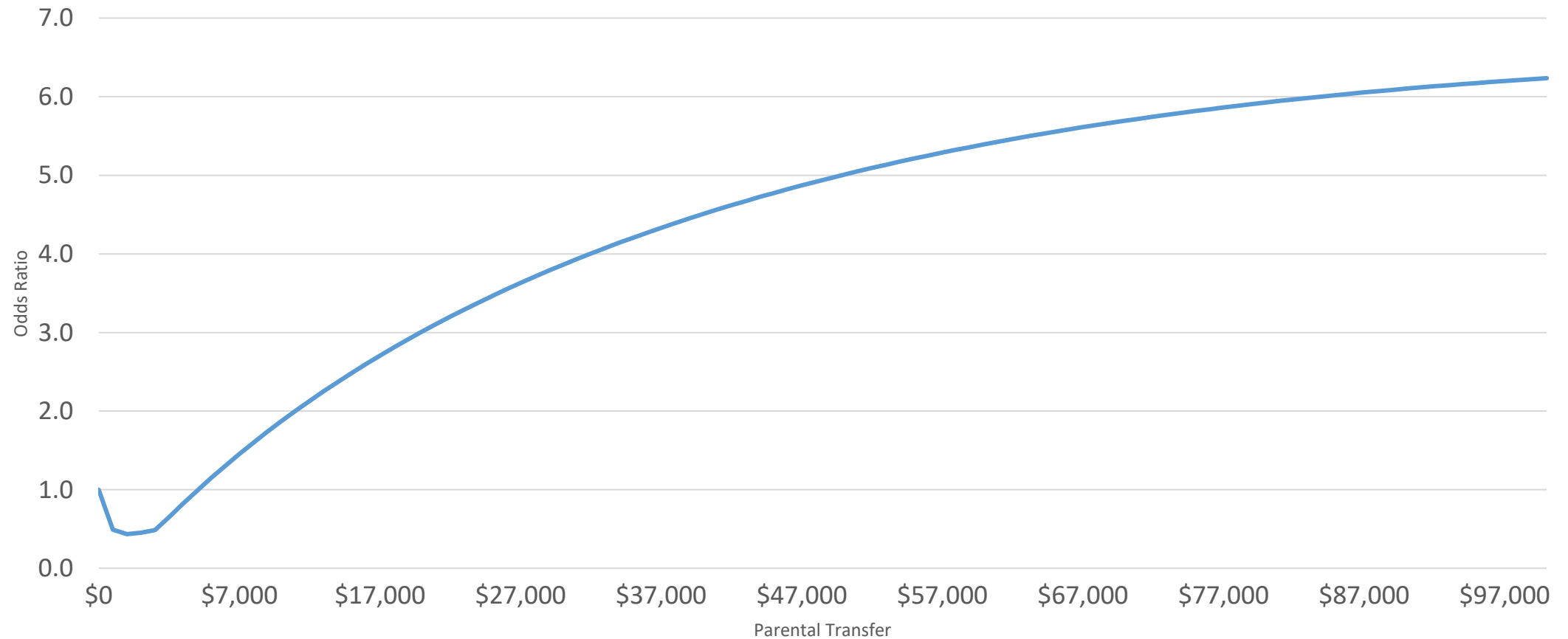


Hypothesis 1-“The probability of transitioning from renting to mortgaging or outright owning increases as the intergenerational wealth transfer increases.”

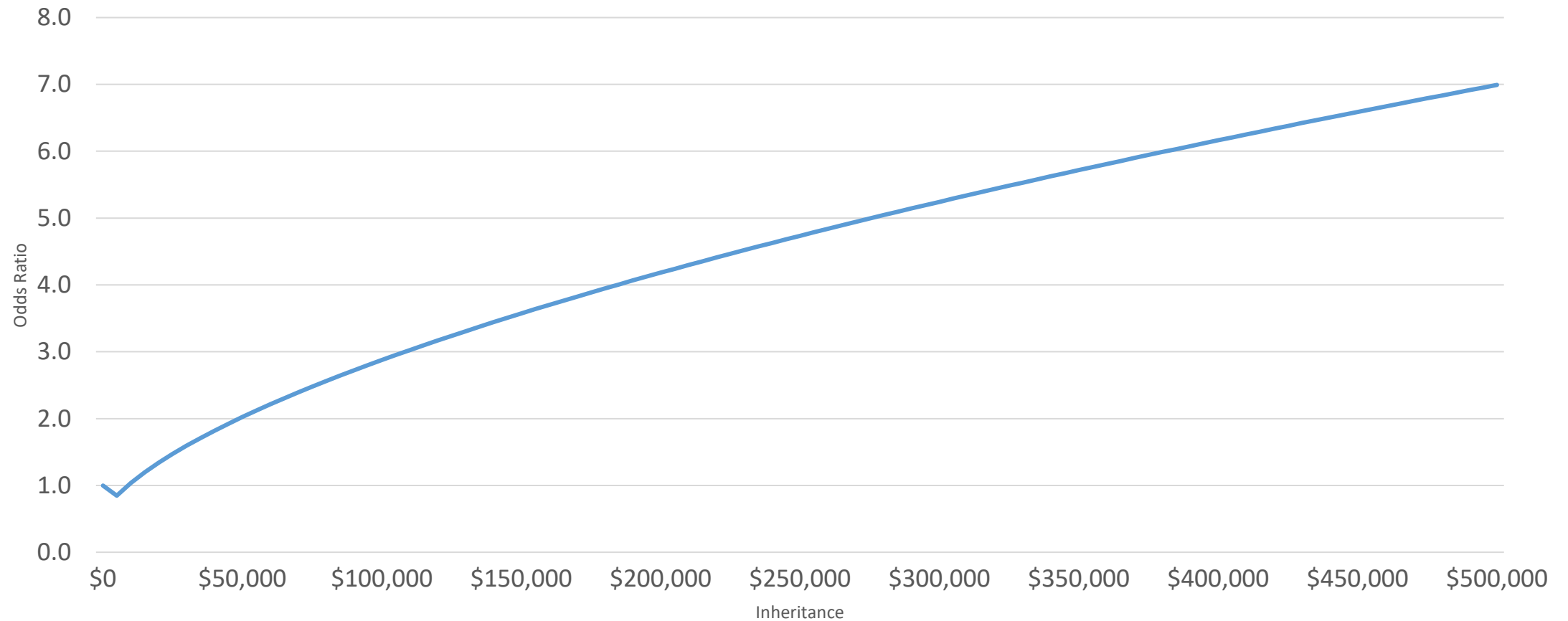
# Wald joint test statistics- Hypothesis 1

	<b>Renter time t-1</b>	
	Transition to Mortgagor	Transition to Outright Owner
Parental transfer $\beta_{dp,m} = \beta_{p1,m} = \beta_{p2,m} = \beta_{p3,m} = 0$	<b>75.62***</b> <b>(0.000)</b>	1.66 (0.645)
Inheritance $\beta_{db,m} = \beta_{b1,m} = \beta_{b2,m} = \beta_{b3,m} = 0$	<b>18.41***</b> <b>(0.000)</b>	6.13 (0.106)

# Odds ratio transitioning from renting to mortgaging with receipt of a parental transfer



# Odds ratio transitioning from renting to mortgaging with receipt of an inheritance

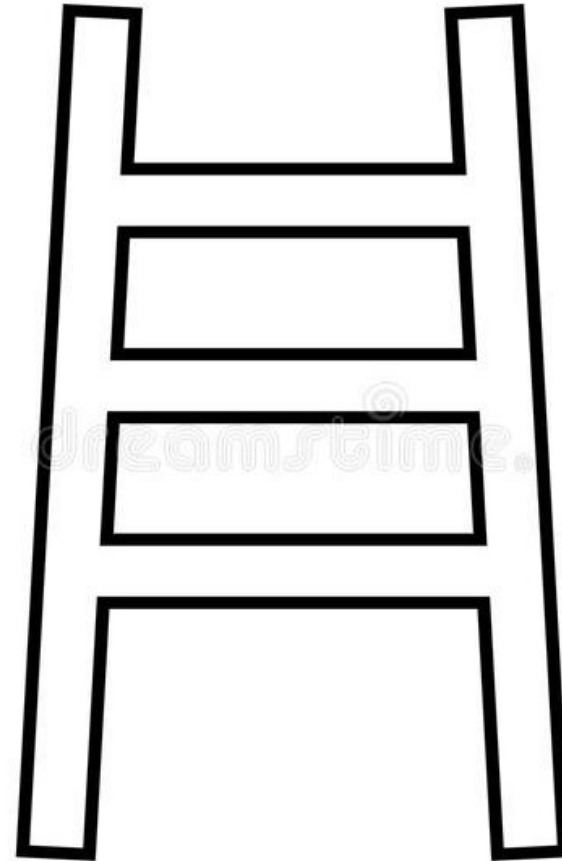
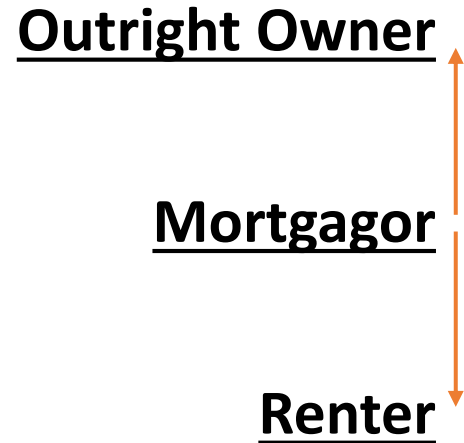




# Odds ratio transitioning from renting to outright owning with receipt of inheritance



# Hypothesis 2



Hypothesis 2-“The probability of transitioning from mortgaging to outright owning increases as the intergenerational wealth transfer increases while the probability of transitioning from mortgaging to renting decreases as the intergenerational wealth transfer increases.”

# Wald joint test statistics- Hypothesis 2

	<b>Mortgagor time t-1</b>	
	Transition to Outright Owner	Transition to Renter
Parental transfer $\beta_{dp,m} = \beta_{p1,m} = \beta_{p2,m} = \beta_{p3,m} = 0$	1.47 (0.831)	<b>16.77***</b> <b>(0.002)</b>
Inheritance $\beta_{db,m} = \beta_{b1,m} = \beta_{b2,m} = \beta_{b3,m} = 0$	<b>29.20***</b> <b>(0.000)</b>	7.05 (0.133)

# Odds ratio transitioning from mortgaging to outright owning with receipt of an inheritance



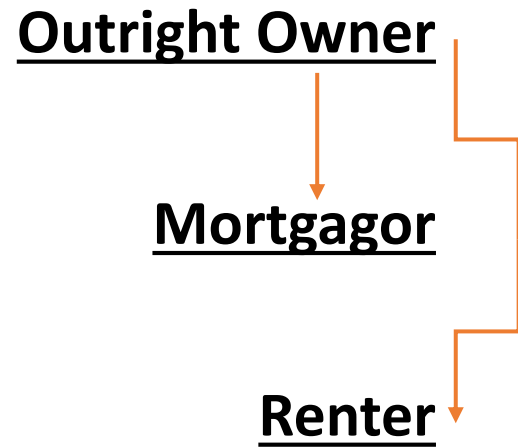
# Odds ratio transitioning from mortgaging to renting with receipt of a parental transfer



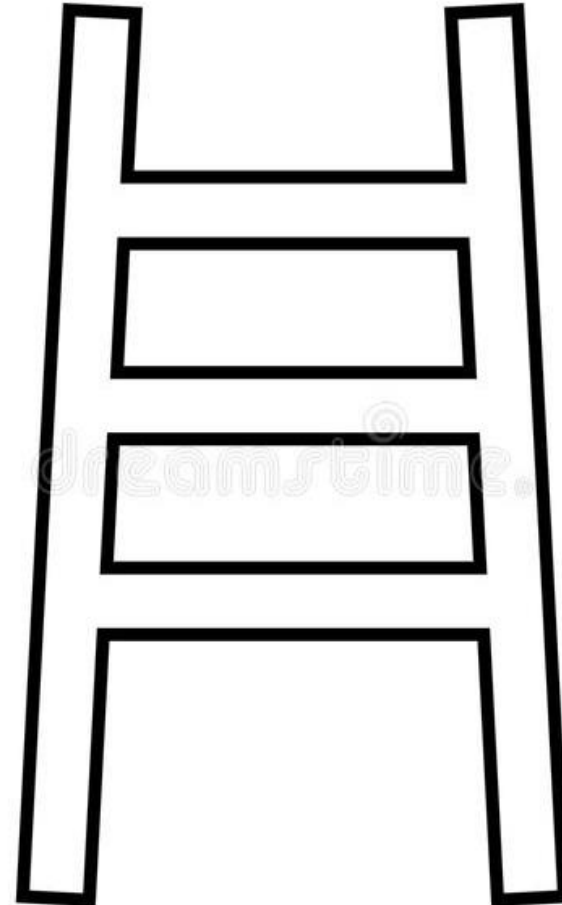
# Odds ratio transitioning from mortgaging to renting with receipt of an inheritance



# Hypothesis 3



Hypothesis 3-“The probability of transitioning from outright owning to mortgaging or renting decreases as the intergenerational wealth transfer increases.”



# Wald joint test statistics- Hypothesis 3

## Outright Owner time t-1

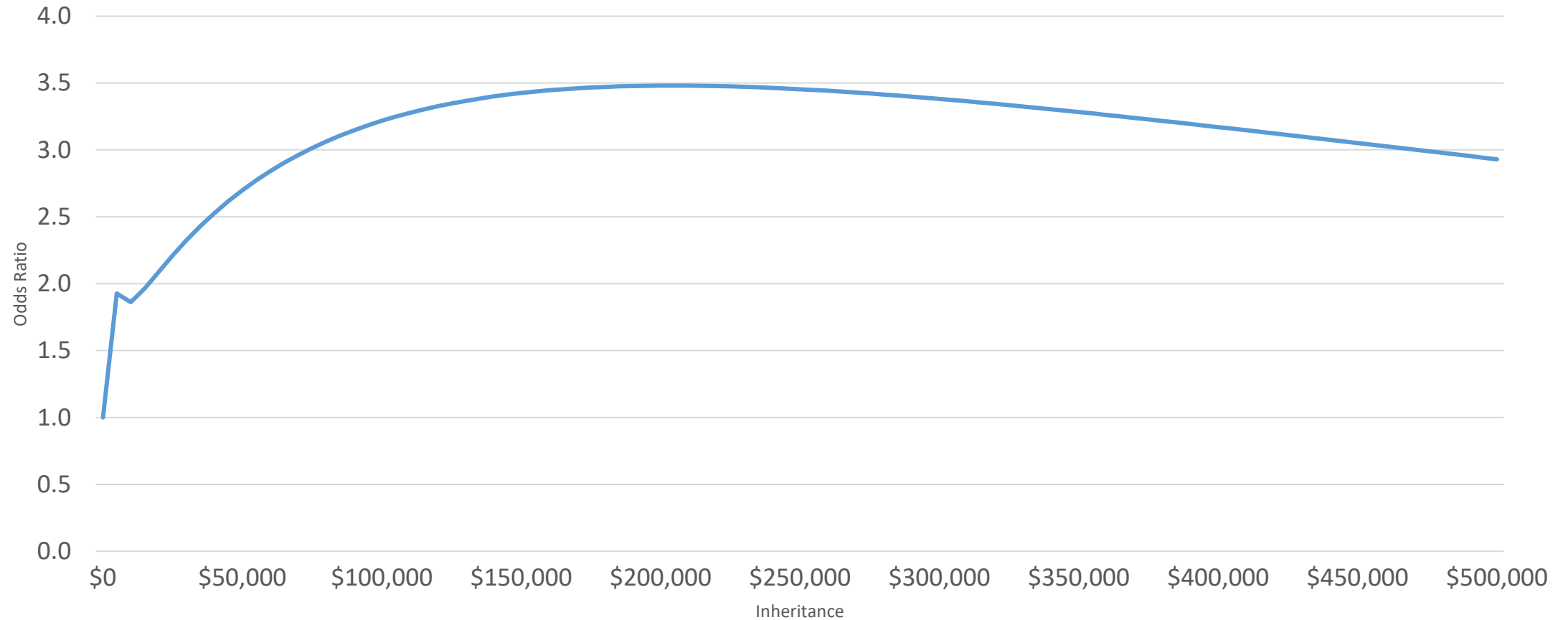
	Transition to Mortgagor	Transition to Renter
Parental transfer $\beta_{dp,m} = \beta_{p1,m} = \beta_{p2,m} = \beta_{p3,m} = 0$	5.61 (0.230)	8.28* (0.082)
Inheritance $\beta_{db,m} = \beta_{b1,m} = \beta_{b2,m} = \beta_{b3,m} = 0$	<b>22.11***</b> <b>(0.000)</b>	<b>20.45***</b> <b>(0.000)</b>



# Odds ratio transitioning from outright owning to mortgaging with receipt of an inheritance



# Odds ratio transitioning from outright owning to renting with receipt of an inheritance



# Expanding thesis research

- Is the effect of the intergenerational transfer significant as the transfer varies.
  - Confidence Intervals
- Probability of tenure transition with receipt of an intergenerational transfer varies with age.
  - Interaction between age and transfers
- Dynamic multinomial panel data model.
  - Probability of tenure status- limitations of odds ratios

# Dynamic Multinomial Model

- $r_{i,t-1}$  is a dummy variable recording tenure status renter in the previous period
- $g_{i,t-1}$  is a dummy variable recording tenure status mortgagor in the previous period
- $o_{i,t-1}$  is a dummy variable recording tenure status outright owner in the previous period

# Dynamic Multinomial Model

- $$y_{m,i,t}^* = (\mathbf{X}_{i,t}\beta_{\mathbf{X},m,r} + dp_{i,t}\beta_{dp,m,r} + p_{i,t}\beta_{p1,m,r} + p_{i,t}^2\beta_{p2,m,r} + p_{i,t}^3\beta_{p3,m,r} + db_{i,t}\beta_{db,m,r} + b_{i,t}\beta_{b1,m,r} + b_{i,t}^2\beta_{b2,m,r} + b_{i,t}^3\beta_{b3,m,r})r_{i,t-1} + (\mathbf{X}_{i,t}\beta_{\mathbf{X},m,g} + dp_{i,t}\beta_{dp,m,g} + p_{i,t}\beta_{p1,m,g} + p_{i,t}^2\beta_{p2,m,g} + p_{i,t}^3\beta_{p3,m,g} + db_{i,t}\beta_{db,m,g} + b_{i,t}\beta_{b1,m,g} + b_{i,t}^2\beta_{b2,m,g} + b_{i,t}^3\beta_{b3,m,g})g_{i,t-1} + (\mathbf{X}_{i,t}\beta_{\mathbf{X},m,o} + dp_{i,t}\beta_{dp,m,o} + p_{i,t}\beta_{p1,m,o} + p_{i,t}^2\beta_{p2,m,o} + p_{i,t}^3\beta_{p3,m,o} + db_{i,t}\beta_{db,m,o} + b_{i,t}\beta_{b1,m,o} + b_{i,t}^2\beta_{b2,m,o} + b_{i,t}^3\beta_{b3,m,o})o_{i,t-1} + y_{i,0}\delta_m + u_{i,t}$$

- Initial conditions problem was accounted for using Woodridge (2005) with the inclusion of  $y_{i,0}$ , the dummy variable.

# Conclusion

- Intergenerational transfers impact tenure status.
- As wealth is transferred from generation to generation, the probability of homeownership is also transferred.
- Considering the benefits of homeownership, researching the effects of intergenerational transfers on tenure status is important.
- Understanding the mechanisms that creates a class structure is beneficial to an egalitarian society.
- Australian society has a mantra of “A fair go for everyone”.

THE END

Questions?