RESERVE BANK OF AUSTRALIA

Do Households Consume Gains in Their Home Equity by Refinancing?

Philipp Grozinger

Australian Conference of Economists, 8 July 2025

The views expressed in this presentation are those of the author and not necessarily those of the RBA.

This document uses unit record data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. The unit record data from the HILDA Survey was obtained from the Australian Data Archive, which is hosted by The Australian National University. The HILDA Survey was initiated and is funded by the Australian Government Department of Social Services (DSS) and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute). The findings and views based on the data, however, are those of the authors and should not be attributed to the Australian Government, DSS, the Melbourne Institute, the Australian Data Archive or The Australian National University and none of those entities bear any responsibility for the analysis or interpretation of the unit record data from the HILDA Survey provided by the authors.

Background

Households can borrow against housing by:

1. Selling their current house and repaying the loan, then taking out a larger than required loan on a new house

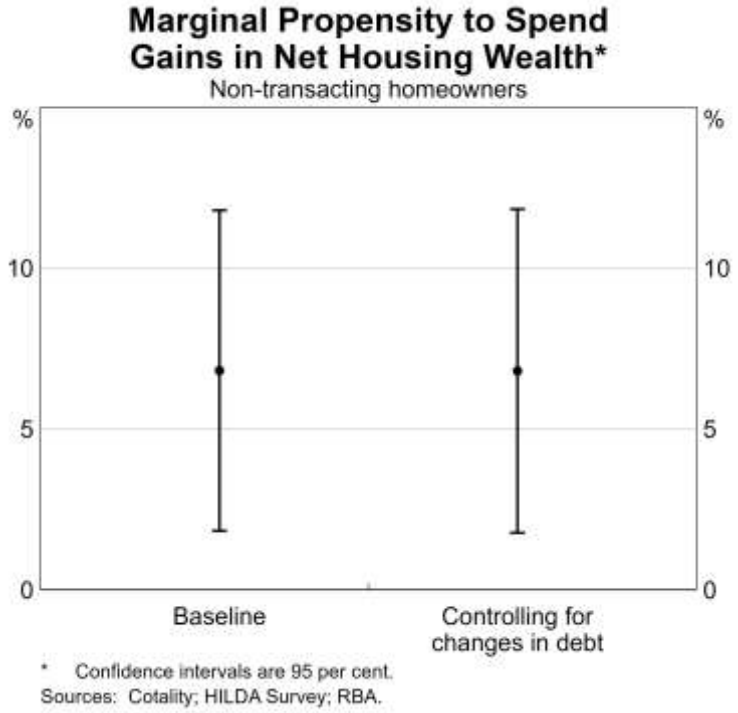
2. Using a home equity loan, home loan “top-up”, remortgaging, or another refinancing option

Schwartz et al. (2006): Transactors spent 13 per cent of equity withdrawals on consumption, non-transactors spent 30 per cent

Overview

1. Use HILDA to obtain baseline estimate for wealth effect for non-transactors

2. Test whether it is ‘explained away’ by households borrowing more, e.g. through refinancing

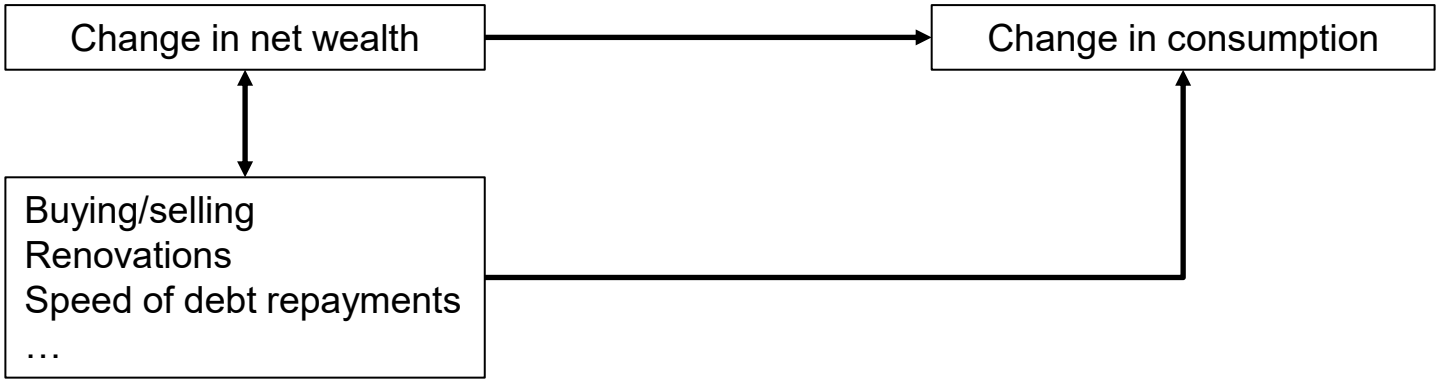


Sample

- Annual panel of homeowners in HILDA with or without mortgage
- Restrict to 2007-2009
  - Can jointly measure changes in equity, debt and durables/discretionary expenditure

Identification

Problem 1: *Changes in net wealth are endogenous to changes in spending (e.g. Paiella and Pistaferri 2016)*



Identification

Solution:

- Only consider homeowners who do not buy or sell

- Calculate changes in net housing wealth ΔE from variation in local (SA3) house prices only, lagged to time of purchase $t - s_i$:

$$A_{it} = \left(1 + g_{lt-s_i+1}\right) \times \cdots \times \left(1 + g_{lt}\right) \times A_{t-s_i}$$

Then, holding debt constant means that $\Delta E_{it} = A_{it} - A_{it-1}$

Identification

Problem 2: *House price growth is correlated with other aggregate supply and demand factors, e.g. changes in expected income, credit supply or monetary policy (e.g. Muellbauer 2007, Attanasio et al 2009)*

Solution:

- City-year fixed effects
- Control for change in income at household-level

Other controls: demographics, changes in investment property value

Any variation left in ΔE_{it}? Yes: std. dev. is $36k (down from $45k)

Empirical design

- Baseline: local projection at horizon h:

$$\Delta_h C_{it+h} = \beta_h \Delta E_{it} + \boldsymbol{X}_{it}\gamma + \alpha_{jth} + \epsilon_{ith} \qquad h = 1,2$$

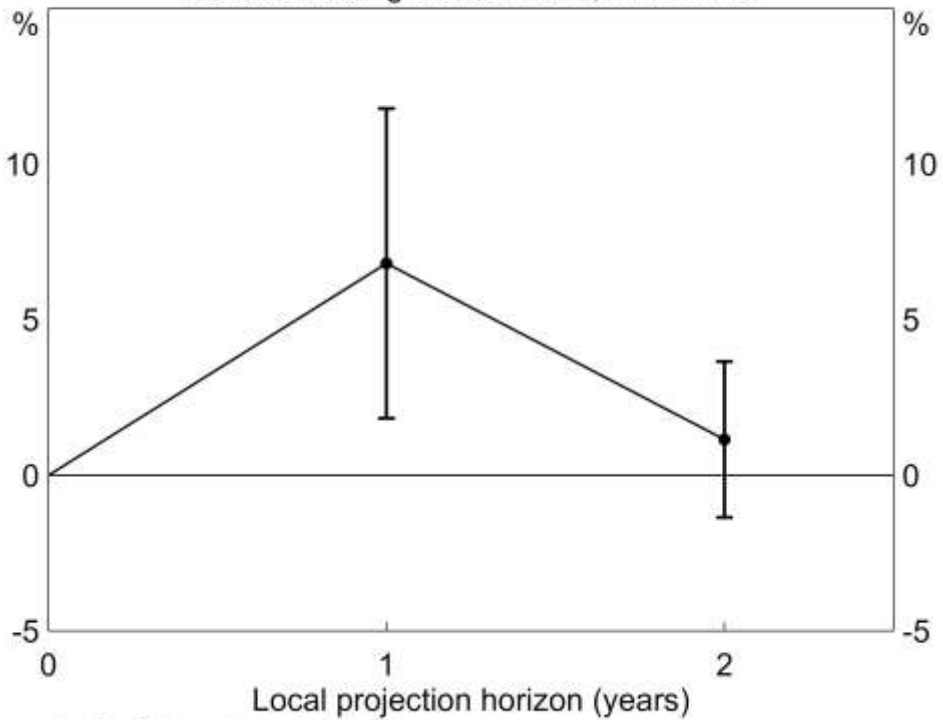
- Test for 'credit channel':

$$\Delta_h C_{it+h} = \beta_h \Delta E_{it} + \underbrace{\delta_h \Delta D_{it+1}}_{\text{Control for debt changes}} + \boldsymbol{X}_{it}\gamma_h + \alpha_{jth} + \epsilon_{ith}$$

Results

Marginal Propensity to Spend Gains in Net Housing Wealth*

Non-transacting homeowners, 2007-2009



* Confidence intervals are 95 per cent.

Sources: Cotality; HILDA Survey; RBA.

Table 1: MPXH Estimates for Non-Transacting Homeowners[(a)]

Cents per dollar, historical sample from 2007–2009

	(1)	(2)	(3)	(4)	(5)
Sample:	All	All	All	All	Non-refi
MPXH (ΔE_{it})	6.81***	6.80***	6.79***	6.63***	8.36***
	(2.54)	(2.56)	(2.54)	(2.56)	(3.08)
Control for change in debt		✓		✓	
Control for new loan			✓	✓	
Control for change in debt × new loan				✓	
City-year fixed effects, other controls[(b)]	✓	✓	✓	✓	✓
Observations	2,953	2,953	2,953	2,953	2,704
Within R^2	0.247	0.247	0.248	0.253	0.247

(a) Standard errors are clustered at the SA3 level. *, ** and *** indicate statistical significance and the 0.1, 0.05 and 0.01 levels. Excludes households who missed a mortgage repayment during the sample period.

(b) Other controls: lagged changes in household spending, income, and property portfolio values, and quadratics of age and lagged income levels.

Sources: Cotality; HILDA Survey; RBA

Empirical design revisited

- Test for ‘credit channel’:

$$\Delta_h C_{it+h} = \beta_h \Delta E_{it} + \underbrace{\delta_h \Delta D_{it+1}}_{\substack{\text{Control for} \\ \text{debt changes}}} + \boldsymbol{X}_{it}\gamma_h + \alpha_{jth} + \epsilon_{ith}$$

- Could also just test relationship between debt and net wealth:

$$\Delta D_{it+1} = \beta \Delta E_{it} + \boldsymbol{X}_{it}\gamma + \alpha_{jt} + \epsilon_{it}$$

Table 2: Local Projection of Housing Wealth on Household Debt over 1 Year Horizon[a]

Cents per dollar, non-transacting homeowners, in 2010 dollars, various sample periods

	(1)	(2)	(3)
Sample:	2007–2009	2004–2019	2004–2005
Change in equity (ΔE_{it})	-8.41	-2.65	36.92*
	(6.48)	(6.61)	(20.12)
Change in household income	8.46	12.78	12.55
	(6.53)	(9.39)	(19.93)
City-time fixed effects and other controls[b]	✓	✓	✓
Observations	4,563	36,629	2,731
Within R^2	0.002	0.012	0.013

(a) Standard errors are clustered at the SA3 level. *, ** and *** indicate statistical significance and the 0.1, 0.05 and 0.01 levels. Excludes households who missed a mortgage repayment during the sample period (except in 2010).

(b) Other controls: lagged changes in debt, income and property portfolio value, and quadratics of age and lagged income levels.

Sources: Cotality; HILDA Survey; RBA

Conclusions

- Housing wealth effect can exist without refinancing for non-transactors
- Wealth effect most likely works through changing precautionary savings behaviour, when liquid assets are high enough
- Limitations:
  - Short sample, but mechanism holds true over longer period
  - No transactors, so probably still a role for lending policies elsewhere

Spares

Identification

Problem 3: *Changes in investment property wealth could be correlated with changes in primary home wealth*

Solution:

- Estimate change in property portfolio wealth using similar approach to primary home and control directly for this

Table A1: HILDA Expenditure Categories

Included categories		Excluded categories
Groceries	Communications bills	
Alcohol	Other insurance	Home repairs/renovations
Cigarettes	Doctor's bills	*Includes endogenous capital expenditure*
Public transport and taxis	Medicines	
Meals eaten out	Furniture*	
Motor vehicle fuel	New motor vehicles*	Used motor vehicles
Private health insurance	Televisions & home entertainment*	*Not final consumption, so not directly relevant for aggregate consumption*
Motor vehicle repairs/maintenance	Computers and related devices*	
Education fees	Holidays and travel*	
Utility bills	Whitegoods*	
Clothing and footwear		

* Changes in discretionary expenditure categories can only be calculated for 2007–2010.

Imputation Methods for Changes in Consumption Expenditure

Specifications over spending categories and age, 2007–2010

	(1) Baseline	(2) Baseline	(3) LASSO
Dependent variable	Total spending	Discretionary spending	Total spending
Number of regressors	17	17	52
Adjusted R^2	0.49	0.02	-
MAD ($)	6,623	6,623	6,694
RMSE ($)	14,737	14,737	14,369

Sources: HILDA Survey; RBA

Table 2: Estimates of the Elasticity of Consumption[(a)]

Cumulative elasticity over 4 quarters from TWFE regression over panel of 6 states, 2003Q3–2019Q4

	(1)	(2)
Net housing wealth[(b)]	0.14***	0.14***
	(0.01)	(0.03)
External refinancing (i.e. with a new lender)		-0.01
		(0.03)
Fixed effects, control for growth in household income (COE)	✓	✓
Observations	396	396
Within R^2	0.12	0.13

(a) Consumption excludes housing services. Standard errors are clustered at the state level. *, ** and *** indicate statistical significance and the 0.1, 0.05 and 0.01 levels.

(b) Log changes calculated using state-level house price growth only.

Sources: ABS; CoreLogic; RBA

Table B1: Summary Statistics for 2007–2009 Sample

Non-transacting homeowners, in 2010 dollars

	All households		Refinanced during 2007–2009	
	Mean	Std. deviation	Mean	Std. deviation
Change in household consumption ($'000)	0.2	23.1	0.8	27.0
Change in equity due to prices ($'000)	20.7	51.6	26.6	67.2
residualised on baseline controls[(a)]	–	38.0	–	48.7
Change in housing debt ($'000)	1.2	128.7	46.8	292.0
Change in household income ($'000)	3.4	40.2	1.7	59.9
Age of household head	53	14	52	11
Total consumption spending ($'000)	39.5	26.5	48.7	31.3
Housing debt ($'000)	97.0	163.4	203.6	283.4
Household income ($'000)	85.8	69.3	104.8	75.0
Observations	4,562		531	
No. households	2,003		214	
No. SA3s	172		104	

(a) Residuals obtained from regression of equity changes on the controls from the baseline specification in column (2) of Table 1.

Sources: CoreLogic; HILDA Survey; RBA