

Who is a residential investor in Australia?

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Housing Supply

Why?

- Growing and aging population;
- Inelastic Housing Supply;
- High house price appreciation;
 - housing affordability
 - capital gains on housing assets
- Higher access to housing finance;
 - low interest rates
 - bank deregulation

Concentrate on direct residential investors (new and existing buildings & for rent or resale) – that access housing credit.

Residential Investment Property Loans (RIPLs)

Reveal the characteristics of the individuals who use mortgage finance to become residential direct investors in Australia during a housing cycle.

Why?:

- Isolate investment purpose on housing;
- No much standard data to observe residential investor behaviour – DiPasquale (1999);
- Answer:
 - who is willing to invest in housing assets? what are their incentives?;
 - how does mortgage finance help direct residential investors in building housing supply?
- Particular interest lies on mortgages for:
 - new buildings;
 - investor-builders.

Answering these questions will contribute in the design of housing policies, housing tax reforms, and financial products.

Today's presentation

- Brief literature review;
- Our work;
- Australian housing investor market;
- Our data;
- Econometric Model;
- Results;
- Conclusions.

Literature: Who are Australian direct residential investors?

- Small-scale individual investors; Yates (1996), Beer (1999).
- Married wealthy males with high income and full-time employment; Brown, Schwann & Scott (2008).
- High income homeowner individual or family partnership owning one/two dwellings for rent; Berry (2000).
- Increases with age and with owner-occupation, but declines after the age of 65; RBA (2015), ABS and ATO data.

Reasons:

- Secure long-term investment; Berry (2000), Beer (1999).
- Wealth accumulation (capital gains); Seelig et al (2009), Brown et al (2008), Shroder (2001), Ioannides & Rosenthal (1994), Beer (1999).
- Permanent income; Ioannides & Rosenthal (1994).
- Taxation advantages (negative gearing/capital gains); Wood & Ong(2013), Beer (1999).
- Mortgage finance access;
- Life-cycle factors; Seelig et al (2009).
- Unintentional; Yates (1996), Kemp & Rhodes (1997).

Our work

This paper:

Examines the determinants for residential direct investment using mortgage credit over the period between 2003-2009

Uses proprietary data on mortgage applications to one of the major banks in Australia;

We find:

- Direct residential investors are:
 - middle age men, who already receive rent income;
 - self-employed or small business proprietors or high income employees;
 - invest mainly on existing houses;
- Willing to invest interstate or in a different postcode;
- They invest in rural/regional areas;
- The main reasons: permanent income and wealth accumulation;
- Other reasons: secure long-term investment and life-cycle factors.

The Australian Mortgage Market: 2003-2009

Features:

- Home ownership rate around 70%;
- Only 9% of all financial commitments are for construction of new dwellings and 3% for the purchase of new dwellings.
- Residential investment represents on average 35% of all housing finance commitments.
- Individual households own on average 83% of all investment dwellings rented to private tenants or resold.
- 3% of investors' financial commitments are destined for construction of new dwellings.
- Investors can access: 50% capital gains deductions and negative gearing option.
- House price inflation – 8.9% average year to year inflation;
- Housing credit growth – 14.6% average 12-month growth.

Australian proprietary dataset

- The bank-originated data-set contains 1, 157, 539 owner-occupier (79%) and residential investment (21%) home loan applications for 7 States and Territories in Australia between Jan 2003 – May 2009.
- Originated by one of the major banks in Australia.
- Borrowers already decided to take a mortgage with the bank.
- The average borrower is male, has 42 years old, has 7 years at their employment, has monthly average net income of \$7,323 (professional/management), and average net wealth of \$669,006 at application time.
- Female borrowers represent 30% of the sample;
- 71% of borrower are married and 68% apply with a co-borrower;
- The average borrower buys an existing house;
- 20% are self-employed.

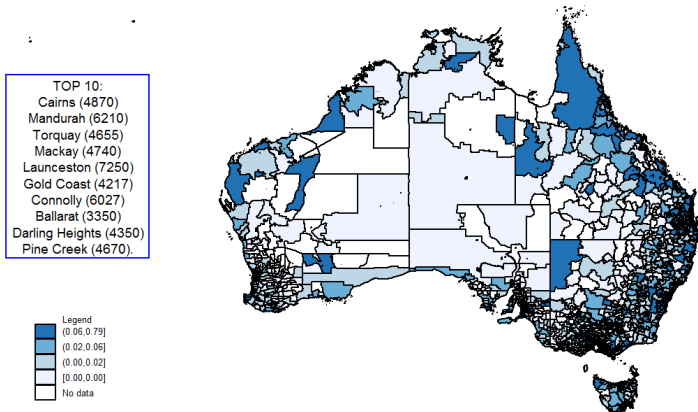
Investors' individual characteristics

Variables	<i>R/PL</i>	<i>O/O</i>	<i>Difference</i>	t-statistic	All Sample
Age	43.24 yrs. (10.69)	41.60 yrs. (10.92)	-1.63 (0.02)	-65.61***	41.94 yrs (10.90)
Number of dependents	0.65 (1.02)	0.81 (1.10)	0.16 (0.00)	63.52***	0.77 (1.08)
Time at current employment	8.08 yrs (7.81)	6.85 yrs (7.29)	-1.22 (0.02)	-71.70***	7.11 yrs (7.41)
<30 yrs	0.10	0.13			0.13
30-39 yrs	0.29	0.33			0.32
40-49 yrs	0.31	0.30			0.30
50-59 yrs	0.23	0.17			0.19
≥60 yrs	0.07	0.06			0.06
Coborrower	0.62	0.70			0.68
Females	0.27	0.31			0.30
Small Business Proprietor	0.13	0.09			0.10
Self-employed	0.27	0.19			0.20
Rent Income	0.02	0.00			0.01
Salary Income	0.96	0.95			0.95
Shares	0.06	0.04			0.05
To-be-built House	0.03	0.05			0.04
Existing House	0.93	0.91			0.91
New House	0.01	0.01			0.01
Vacant Land	0.03	0.04			0.04
State mobility	0.11	0.03			0.04
Postcode mobility	0.49	0.23			0.28
Total obs.	239,225	918,225			1,157,539

[standard deviations]. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure

Proportion of residential investments by postcode, 2003Q1-2009Q1



Investors' financial characteristics

Variables	RIPL	O/O	Difference	t-statistic	All Sample
Loan Amount	\$302,997 (230,367)	\$194,991 (196,401)	-\$108,006 (468)	-230***	\$217,320 (208,527)
Monthly Repayment	\$2,774 (5,502)	\$1,263 (1,493)	-\$1,511 (6.53)	-230***	\$1,577 (2,902)
Monthly Total Expenses	\$7,576 (6,644)	\$5,013 (4572)	-\$2,562.5 (11.64)	-220***	\$5,543 (5,176)
Uncommitted Monthly Income	\$2,008 (5,844)	\$1,726 (4,258)	-\$282 (10.63)	-26.57***	\$1,784 (4,632)
Rent/Board Income	\$1,427 (2,194)	\$275 (963)	-\$1,151 (3.02)	-380***	\$513 (1,396)
Net Monthly Income	\$9,569 (6,786)	\$6,737 (4,334)	-\$2,832 (11.34)	-250***	\$7,323 (5,073)
Total Assets	\$1,447,288 (3,738,070)	\$793,046 (1,448,048)	-\$654,242 (4,897)	-130***	\$928,306 (2,149,974)
Liquid Assets	\$171,026 (466,191)	\$82,896 (271,553)	-\$88,130 (738)	-120***	\$101,116 (323,577)
Total Value of Shares	\$5,397 (78,388)	\$2,310 (48,542)	-\$3,087 (128.6)	-24***	\$2,948 (56,045)
Total Liabilities	\$408,219 (947,198)	\$215,165 (616,160)	-\$193,055 (1,601)	-120***	\$255,078 (701,970)
Short Term Liabilities	\$18,279 (85,309)	\$10,614 (52,110)	-\$7,665 (138.83)	-55.21***	\$12,199 (60,566)
Net Wealth	\$1,032,171 (3,707,314)	\$574,355 (1,477,515)	-\$457,815 (4,908)	-93.28***	\$669,006 (2,146,533)
PTIR	27% (20.35)	19% (18.15)	-8% (0.4)	-190***	21% (18.91)
LVR	64% (18.39)	60% (22.12)	-4% (0.5)	-78.81***	61% (21.46)
Total obs.	239,225	918,225			1,157,539

(standard errors). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Empirical model specification

Let y_i denote the contract chosen by household i , $i = 1, \dots, n$. We assume that $y_i = 1$ if i chooses a RIPL and $y_i = 0$ otherwise.

$$\mathbb{P}(y_i = 1 \mid I_i) = \Phi(\beta_0 + \beta_1 W_i' + \beta_2 Y_i' + X_i' \delta) \quad (1)$$

where

- $(\beta_0, \beta_1', \beta_2', \delta')'$ is an unknown coefficient vector;
- W is a set of market variables;
- Y is a set of borrower's financial variables;
- X includes household characteristics variables; and
- $\Phi(\cdot)$ is (*cdf*) of a standard normal distributed random variable.

Residential Investors

	P(RIPL = 1)				
	(1)	(2)	(3)	(4)	(5)
Term Deposit Rate 3yrs.	-0.001 [0.002]	-0.003 [0.002]	-0.018*** [0.002]	-0.018*** [0.002]	-0.067*** [0.005]
Aus Gov Bonds 10yrs.	0.022*** [0.001]	0.022*** [0.001]	0.019*** [0.001]	0.019*** [0.002]	0.007** [0.002]
Dwelling Index Change	-0.022*** [0.003]	-0.021*** [0.003]	-0.023*** [0.003]	-0.023*** [0.003]	0.014** [0.005]
Age < 30 yrs	-0.014*** [0.001]	-0.036*** [0.001]	-0.035*** [0.001]	-0.036*** [0.001]	-0.027*** [0.002]
Age 30- 39 yrs	-0.012*** [0.001]	-0.015*** [0.001]	-0.022*** [0.001]	-0.022*** [0.001]	-0.019*** [0.001]
Age 50-59 yrs	0.026*** [0.001]	0.004*** [0.001]	0.016*** [0.001]	0.016*** [0.001]	0.012*** [0.002]
Age ≥ 60 yrs	-0.012*** [0.002]	-0.043*** [0.002]	0.007*** [0.002]	0.007*** [0.002]	-0.010*** [0.003]
Shares	0.064*** [0.002]	0.064*** [0.002]	0.071*** [0.002]	0.071*** [0.002]	0.036*** [0.002]
Net Wealth	0.039*** [0.001]	0.041*** [0.001]	-0.001** [0.000]	-0.001** [0.000]	0.015*** [0.001]
Female		-0.030*** [0.001]	-0.003** [0.001]	-0.003** [0.001]	-0.005*** [0.001]
Married		-0.002** [0.001]	-0.026*** [0.001]	-0.026*** [0.001]	-0.009*** [0.001]
Number of Dependents		-0.028*** [0.000]	-0.025*** [0.000]	-0.025*** [0.000]	-0.017*** [0.001]
Gross Monthly Income			0.161*** [0.001]	0.161*** [0.001]	0.128*** [0.001]
Self-Employment			0.033*** [0.001]	0.033*** [0.001]	0.035*** [0.002]

[standard errors]. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	P(RIPL = 1)				
	(1)	(2)	(3)	(4)	(5)
Professionals			0.005** [0.002]	0.005** [0.002]	0.001 [0.002]
Semi-Professionals			0.006** [0.002]	0.006** [0.002]	0.016*** [0.003]
Management			0.001 [0.002]	0.001 [0.002]	0.002 [0.002]
Technical			0.013*** [0.002]	0.013*** [0.002]	0.014*** [0.003]
Agriculture			0.058*** [0.004]	0.058*** [0.004]	0.040*** [0.005]
Retired			0.003 [0.006]	0.003 [0.006]	0.010 [0.008]
Small Business Proprietor			0.013*** [0.002]	0.013*** [0.002]	0.017*** [0.003]
Income Rent			0.234*** [0.005]	0.234*** [0.005]	0.187*** [0.006]
Standard Variable Housing Rate				-0.000 [0.001]	0.007 [0.006]
To-be-built					-0.098*** [0.003]
New House					0.013* [0.005]
Vacant Land					-0.070*** [0.003]
Inter-state investment					0.101*** [0.002]
Other postcode investment					0.139*** [0.001]

Shea Partial R^2	0.0194	0.0251	0.0757	0.0755	0.1245
N	1,144,813	1,144,798	1,137,112	1,135,344	536,152

[standard errors]. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Results

Residential Investors tend to:

- Be single males between 40-60s years of age;
- Have high income;
- Be self-employed or small business proprietors;
- Be in technical or agricultural occupations;
- Already receive rent income;
- Invest in new or existing houses rather than build;
- Invest inter-state or in a different postcode to where they currently live;
- Invest in real estate when long-term government bond yields are high;
- Also invest in shares;

Discussion

- Females and those married with dependents are less like to be residential investors;
- Retirees are less likely to take RIPLs;
- A house price appreciation sentiment seems to reduce the likelihood of being a residential investor – until type and location of the property are considered;
- Standard variable rates for a housing loan have no effect on the probability of being a residential investor;
- Net wealth has contradicting signs.

Conclusion

Confirm previous results:

- middle age men, who already receive rent income;
- self-employed or small business proprietors or high income employment;
- invest on existing and sometimes new houses;

Find that:

- Direct residential investors are willing to invest interstate or in a different postcode.
- They invest in rural/regional areas;
- The main reasons for investing in housing seem to be permanent income and wealth accumulation.
- Other important reasons are secure long-term investment and life-cycle factors.

Future Work

Robustness checks:

- different period sub-samples;
- different combinations of exogenous variables;

Incorporate

- SIRCA/CoreLogic RP Data;
- Analysis on investment location and 'home bias';
- Define 'winners' and 'losers'.

Thank You - Questions?