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4B-2

Developing Financial Literacy Through Home Ownership
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The problem

Financial literacy in Australia

- Only 66% of Australians can be classified as financially literate
- 1 in 4 people answer the Big 5 questions correctly
- Young people aged 18-24 have especially low financial literacy
- Women score less than men (60% vs 76% correct)

Financial education offers some benefit, but not much

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What is the benefit of learning by doing?

Purchasing a home:

- Often single biggest financial decision
- Process: time consuming, highly involved, requires intense and sustained planning
- Requires: comparing homes (features, location, restrictions, price); comparing finance products and providers (fixed or variable interest rates), legal implications (obligations, negotiations, town planning and property checks)
- Understanding of the general economic environment, formulating views of the future (interest rates, employment)
- hot markets – decision making under pressure
- Information asymmetry- financial product providers, but also real estate agents and unethical bidding behaviours.
- What role do mortgage brokers and friends/family play in building financial knowledge during this process?



The purpose of the research

Is financial knowledge improved after home purchase?

Household, Income and Labour Dynamics in Australia Survey:





Research Background

Mortgage debt demand

- Household factors influenced the amount of debt (family size, income) and the debt was often used to purchase non-housing assets (Jones, 1993; Brueckner, 1994; Ling & McGill, 1998).

Choice between fixed and variable-rate mortgages

- Marketing influenced take up of fixed rate mortgages in the UK in the 90's (Leece, 2000)
- low earnings, limited education and lower financial mastery associate with variable-rate mortgages in Sweden (Hullgren and Soderbeg, 2013)



Research Background

Future interest rates

- that borrowers did not have a good understanding of the potential for interest rate changes in the future (Bucks and Pence, 2008).
- consumers with present bias preferred interest-only loans (Gathergood and Weber, 2017a)

Financial literacy

- consumers with good financial literacy were more informed about their mortgage contract and generally had lower interest rates than those without good financial literacy (Huston, 2012; Bialowolski *et al.* 2020)
- consumers with limited 'financial know-how' were associated with choosing interest-only loans and were reluctant to choose between fixed rate and variable mortgage loans (Seay, Preece and Le, 2017)
- not understanding compound interest's effect on mortgage loan repayments were a reason for young people failing to get into the housing market (Gathergood and Weber, 2017b)



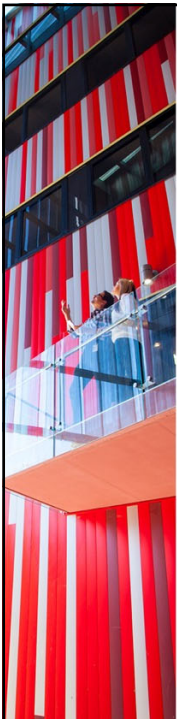
Research Background

Mortgage delinquency

- consumers with lower financial knowledge increased the probability of selecting a risky mortgage in the U.S. (Zahirovic-Herbert, Gibler, & Chatterjee, 2016).
- Consumers with high financial confidence were at much less risk of delinquent repayments (Kim, Lee & Hanna, 2020)

Advice

- adverse impacts of low financial literacy and mortgage delinquency may be partially overcome with face-to-face interaction with brokers (Conklin, 2017)
- when consumers consulted others to make their mortgage decision, (financial advisers and peers), they were able to navigate the financial risks better (Cox, Brounen and Neuteboom, 2015)



Data

- **HILDA Survey**- tracks 19,914 participants in over 8,000 households since 2000
- Individual Self-Complete Questionnaire- demographic and socio-economic data (annual) and 5 FL Q's (2016 and 2020)
- Household Questionnaire- home asset ownership + other assets in Wealth Module (every four years- 2002, 2006, 2010, 2014 and 2018)
- EHO- owned property in 2018 and beforehand
- FHO- owned property in 2018 and not beforehand
- NHO- never owned property since 2000

RQ's

H1: Acquiring a property for the first time increases the financial literacy score for individuals.

H2: Acquiring subsequent properties marginally improves financial literacy scores.

able 2. Financial Literacy Descriptive Statistics, 2016 and 2020 (Means)

Variable		FHO		NHO		EHO	
		2016	2020	2016	2020	2016	2020
1. Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?	102* (=1)	0.479	0.397	0.305	0.408	0.697	0.655
	Other value (=0)	0.001	0.002	0.004	0.002	0.004	0.001
	Do not know (=0)	0.071	0.099	0.145	0.184	0.093	0.143
	Refuse to answer (=0)	0.005	0.001	0.010	0.005	0.010	0.002
	Non responding person (=0)	0.444	0.501	0.337	0.400	0.196	0.198
2. Imagine the interest rate on your savings account was 1% per and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?	More than today (=0)	0.063	0.064	0.095	0.083	0.079	0.082
	Exactly the same (=0)	0.042	0.046	0.084	0.070	0.063	0.063
	Less than today* (=1)	0.398	0.328	0.377	0.322	0.585	0.561
	Do not know (=0)	0.049	0.060	0.096	0.120	0.067	0.093
	Refuse to answer (=0)	0.005	0.001	0.012	0.005	0.010	0.003
Non responding person (=0)	0.444	0.501	0.337	0.400	0.196	0.198	
3. Please tell me whether this statement is true or false. "Buying shares in a single company usually provides a safer return than a managed share fund".	True (=0)	0.085	0.061	0.154	0.095	0.107	0.084
	False* (=1)	0.436	0.363	0.430	0.360	0.630	0.599
	Do not know (=0)	0.032	0.072	0.071	0.140	0.059	0.116
	Refuse to answer (=0)	0.003	0.003	0.008	0.004	0.008	0.002
	Non responding person (=0)	0.444	0.501	0.337	0.400	0.196	0.198
4. Suppose by the year 2020 your income has doubled, but the prices of all of the things you buy has also doubled. In 2024, will you be able to buy more than today, exactly the same as today, or less than today with your income?	More than today (=0)	0.016	0.019	0.019	0.020	0.020	0.023
	Exactly the same as today* (=1)	0.467	0.419	0.477	0.434	0.637	0.643
	Less than today (=0)	0.060	0.041	0.128	0.092	0.118	0.100
	Do not know (=0)	0.010	0.019	0.029	0.049	0.019	0.034
	Refuse to answer (=0)	0.004	0.002	0.011	0.005	0.010	0.003
Non responding person (=0)	0.444	0.501	0.337	0.400	0.196	0.198	
5. Please tell me whether this statement is true or false. "An investment with a high return is likely to be high risk".	True* (=1)	0.454	0.406	0.495	0.426	0.687	0.668
	False (=0)	0.080	0.058	0.109	0.077	0.078	0.072
	Don't know (=0)	0.019	0.034	0.052	0.093	0.031	0.060
	Refuse to answer (=0)	0.003	0.001	0.008	0.004	0.007	0.002
	Non responding person (=0)	0.444	0.501	0.337	0.400	0.196	0.198
FINLITSCORE		2.234	1.913	2.284	1.951	3.237	3.126



Table 3. Asset Ownership Descriptive Statistics, 2018

Type	Asset	Participation rate	Mean	Min	Max	SD
FHO	Family home	100	\$ 690,145	\$ 4,500	\$ 5,381,126	\$ 543,551
	Other property	0.253	\$ 200,481	\$0	\$ 5,230,635	\$ 553,151
	Share holdings	0.281	\$ 33,535	\$0	\$ 3,191,762	\$ 231,010
	Business Assets	0.154	\$ 74,782	\$0	\$ 7,087,228	\$ 478,836
EHO	Family home	0.852	\$ 685,886	\$0	\$ 5,381,126	\$ 661,731
	Other property	0.271	\$ 216,620	\$0	\$ 5,230,635	\$ 548,206
	Share holdings	0.353	\$ 50,709	\$0	\$ 3,191,762	\$ 242,160
	Business Assets	0.142	\$ 76,451	\$0	\$ 7,087,228	\$ 481,997
NHO	Family home	0	\$0	\$0	\$0	\$0
	Other property	0.091	\$ 49,058	\$0	\$ 3,100,000	\$ 213,234
	Share holdings	0.092	\$ 5,474	\$0	\$ 3,191,762	\$ 74,323
	Business Assets	0.064	\$ 10,200	\$0	\$ 3,000,000	\$ 122,883



Difference-in-Difference Method

- measures what effect the new activity (of buying a home) had on financial literacy scores
- The DID method is strongly dependent on the parallel trend assumption, i.e. without buying a first home, the outcome variable of *FHO* and *NHO* would have followed the same time paths. With only one observation to depend on in 2016, it is difficult to verify that *FHO* and *NHO* were following the same trend in *FINLITSCORE*'s over time
- $y_{it} = \beta_1 \times Time_t + \beta_2 \times FHO_i + \beta_3 \times DID_{it} + \beta_4 \times r_i + \beta_5 \times A_i + const + \varepsilon_{it}$
- DID_{it} is the interaction term for $Time_t \times FHO_i$



Table 1. Demographic Descriptive Statistics, 2018

Variable		FHO	EHO	NHO
		Mean	Mean	Mean
Gender	Male (=0)	0.507	0.487	0.486
	Female (=1)	0.493	0.513	0.514
Age	<24 (=1)	0.426	0.284	0.424
	25-34 (=2)	0.202	0.140	0.021
	35-44 (=3)	0.110	0.118	0.112
	45-54 (=4)	0.077	0.131	0.091
	55-64 (=5)	0.059	0.136	0.062
	>65 (=6)	0.049	0.180	0.066
Educational attainment	Degree or higher qualification (=1)	0.168	0.228	0.120
	Vocational qualification (=2)	0.184	0.255	0.222
	Year 12 (=3)	0.063	0.117	0.106
	<Year 12 (=4)	0.097	0.183	0.201
Household type	Couple (=1)	0.222	0.270	0.184
	Couples with children (=2)	0.654	0.510	0.437
	Lone parent with children (=3)	0.077	0.083	0.217
	Multi-family/other (=4)	0.019	0.012	0.037
	Lone person (=5)	0.027	0.124	0.124
Employment status	Employed (=1)	0.380	0.506	0.391
	Unemployed (=2)	0.022	0.023	0.044
	Not in the workforce (=3)	0.110	0.254	0.213
Income band	<\$30,000 (=1)	0.040	0.094	0.176
	\$30,000-\$49,999 (=2)	0.055	0.115	0.196
	\$50,000-\$79,999 (=3)	0.117	0.143	0.224
	\$80,000-\$124,999 (=4)	0.305	0.228	0.235
	\$125,000-\$199,999 (=5)	0.319	0.260	0.128
	>\$200,000 (=6)	0.163	0.159	0.041
	None	0.746	0.477	0.640

Results



Table 2. Financial Literacy Descriptive Statistics, 2016 and 2020 (Means)

Variable		FHO		NHO		EHO	
		2016	2020	2016	2020	2016	2020
1. Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?	102* (=1)	0.479	0.397	0.505	0.408	0.697	0.655
	Other value (=0)	0.001	0.002	0.004	0.002	0.004	0.001
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2. Imagine the interest rate on your savings account was 1% per and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?	Non responding person (=0)	0.444	0.501	0.337	0.400	0.196	0.198
	More than today (=0)	0.063	0.064	0.095	0.083	0.079	0.082
	Exactly the same (=0)	0.042	0.046	0.084	0.070	0.063	0.063
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	True* (=1)	0.454	0.406	0.495	0.426	0.687	0.668
	False (=0)	0.080	0.058	0.109	0.077	0.078	0.072
Note: *correct responses.	Don't know (=0)	0.019	0.034	0.052	0.093	0.031	0.060
	Refuse to answer (=0)	0.003	0.001	0.008	0.004	0.007	0.002
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	FHO			NHO			EHO		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Time	-0.125 ***	-0.137 ***	-0.163 ***	-0.031 **	0.156 ***	-0.043 **	-0.340 ***	-0.362 ***	0.342 ***
FHO	0.012	0.008	0.012	0.013	0.010	0.013	0.021	0.022	0.025
EHO	-0.946 ***	-0.080 ***	-0.946 ***						
NHO	0.037	0.020	0.037				1.129 ***	0.396 ***	1.129 ***
DID				-0.967 ***	-0.422 ***	-0.967 ***	0.020	0.018	0.020
Gender				0.022	0.020	0.022	0.189 ***	0.196 ***	0.176 ***
Age	0.044	0.025	0.044	0.026	0.020	0.026	0.025	0.024	0.025
Educational Attainment		-0.355 ***			-0.392 ***			0.392 ***	
		0.007			0.009			0.009	
		-0.006 ***			0.015 ***			0.015 ***	
		0.000			0.000			0.000	
		-0.103 ***			-0.126 ***			-0.127 ***	
		0.002			0.002			0.002	



	FHO			NHO			EHO		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Household Type		0.003 ***			0.000 ***			0.000	
		0.001			0.001			0.001	
Employment Status		0.205 ***			-0.192 ***			-0.193 ***	
		0.004			0.006			0.006	
Income		0.072 ***			0.041 ***			0.041 ***	
		0.001			0.002			0.002	
Children		0.227 ***			0.074 ***			0.072 ***	
		0.004			0.004			0.004	
Shareowner			0.512 ***			0.297 ***			0.300 ***
			0.028			0.028			0.028
Other Property			0.105 **			-0.057			-0.048
			0.032			0.033			0.032
Business owner			-0.180 ***			-0.296 ***			-0.288 ***
			0.042			0.043			0.042
Constant	2.944 ***	2.932 ***	2.944 ***	3.099 ***	4.015 ***	3.099 ***	2.099 ***	3.650 ***	2.099 ***
	0.010	0.022	0.010	0.011	0.030	0.011	0.017	0.031	0.017
R2	0.023	0.629	0.026	0.066	0.199	0.067	0.076	0.201	0.077

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Discussion

- Financial literacy scores declined 2016-2020
- Does buying a home > 'less worse' financial literacy scores?
- The DID term is less worse for FHO (-0.171) than NHO (-0.335)
- H1 supported (sort of)
- No positive gender insights

Further research:

- Direct share ownership has strong association but which causal direction?
- Attention and interventions needed to strengthen financial literacy of small business owners

