Utrecht University

School of Economics

Know more, spend more?

The impact of financial literacy on life cycle consumption

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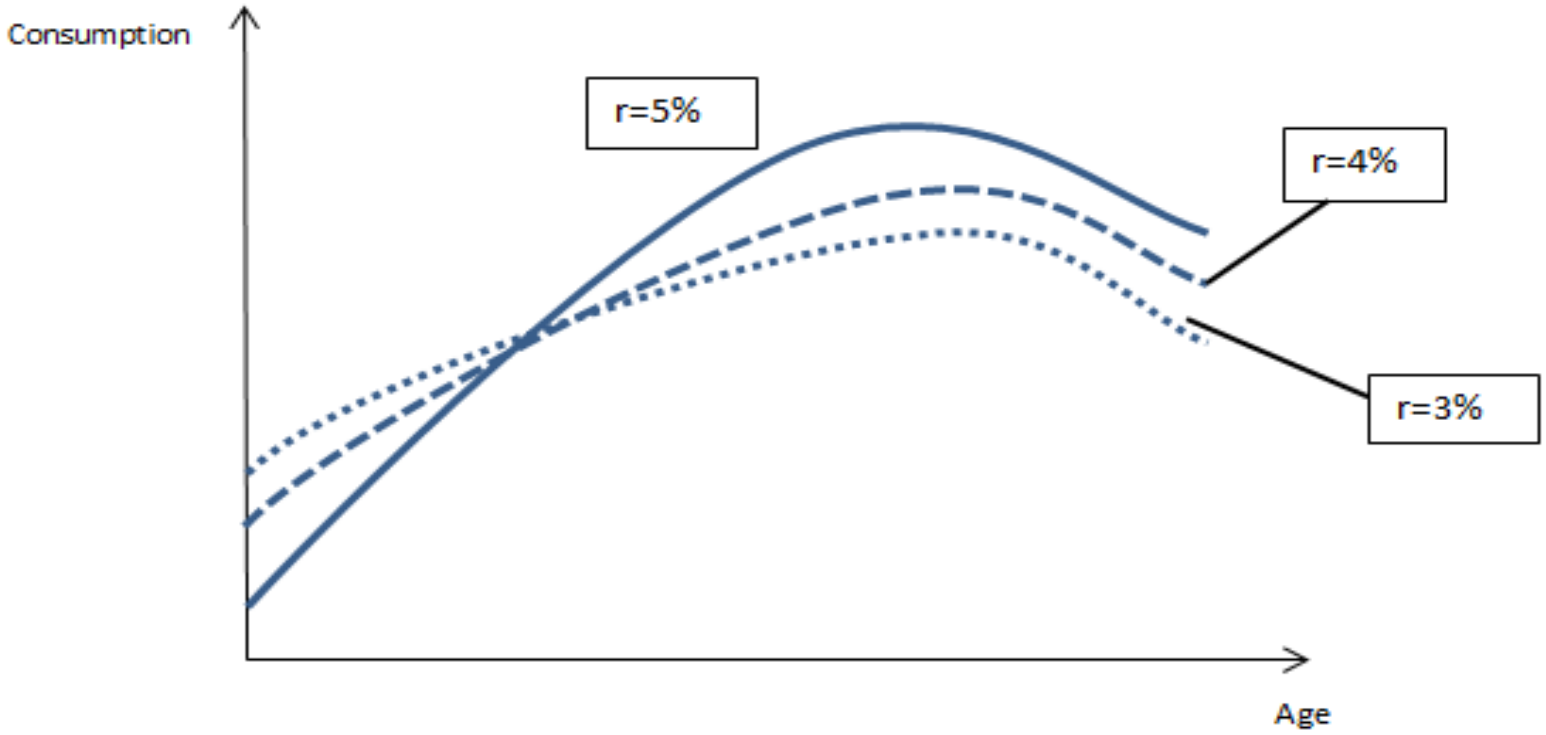
Introduction

- What is financial literacy? Why study financial literacy?
- And why relate it to consumption?
- RQ: What is the impact of financial literacy on household consumption growth?

Consumption and financial literacy



Data

- Data – LISS panel (CentERdata)
  - Financial literacy: 1 wave (2009), 2000 households
  - Consumption: 3 waves (2009-2012), 5400 households

- Data on individual level of financial literacy, individual responses to household consumption

Testing financial literacy

- Interest compounding
- Inflation
- Risk diversification
- Bond prices and interest rates

How much people know

Table 1: Share of respondents by number of Correct, Incorrect and DK answers

	None	1	2	3	All Four	Mean nr of answers
Correct	5,92	13,49	37,79	30,31	12,49	**2,30**
Incorrect	49,84	36,79	11,9	1,43	0,03	**0,65**
DK	42,06	27,2	23,12	5,05	2,59	**0,99**
Refuse	97,38	0,97	0,65	0,16	0,84	**0,06**

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Gender and FL

Table 2: Percentages by gender and question type (n=3210)

	Interest	Inflation	Risk	Bonds
Female				
Correct	87.84	73.57	32.11	12.92
Incorrect	5.61	11.46	16.43	30.47
DK	4.97	13.10	49.59	54.8
Refuse	1.58	1.87	1.87	1.81
Male				
Correct	91.33	84.80	54.6	26.07
Incorrect	4.73	8.27	14.93	38.27
DK	2.87	5.6	28.8	34.8
Refuse	1.07	1.33	1.67	0.87

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Incorrect	4.73	8.27	14.93	38.27
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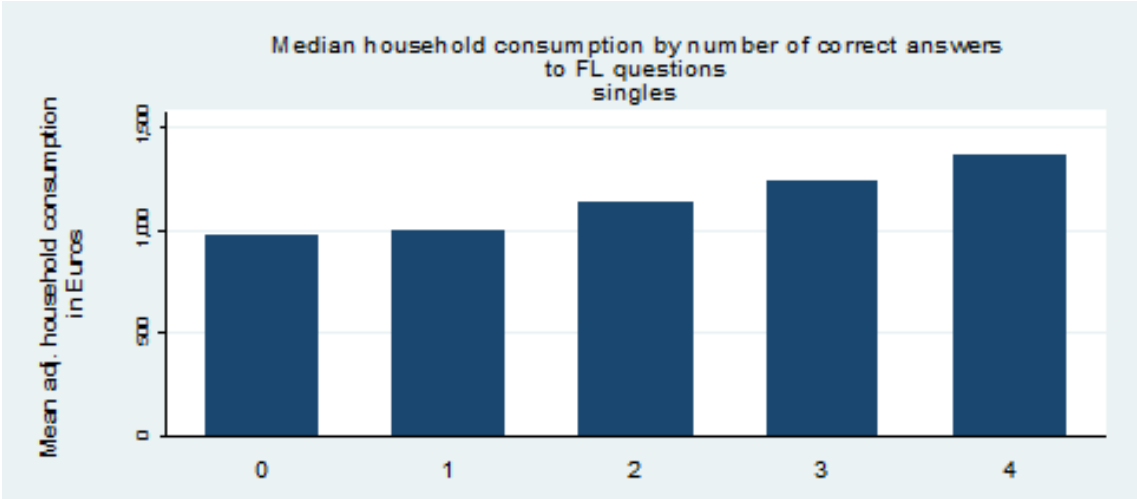
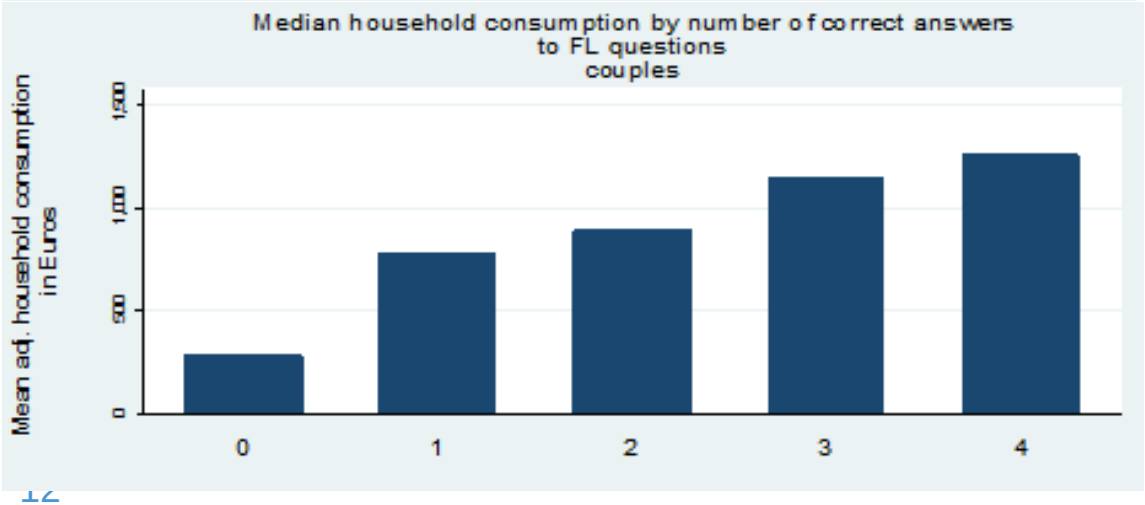
Refuse	1.07	1.33	1.67	0.87

Household consumption and FL





Stocks and Bonds

- average ownership: 10,98%

Dependent variable		unconditional	low FL woman	high FL woman	low FL man	high FL man
Investment	$\frac{\partial P}{\partial FL_{woman}}$	0.0236***	0.0138***	0.0381***	0.0299**	0.0114
		(0.00735)	(0.00353)	(0.0147)	(0.0147)	(0.0152)
	$\frac{\partial P}{\partial FL_{man}}$	0.0390***	0.0521***	0.0205	0.0141***	0.0609***
		(0.00816)	(0.0164)	(0.0205)	(0.00185)	(0.0158)

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		(0.00816)	(0.0164)	(0.0205)	(0.00185)	(0.0158)

Estimating Euler equation

VARIABLES	(1) single females	(2) single males	(3) couples unconditional	(4) couples at low FL woman	(5) couples at high FL woman	(6) couples at low FL man	(7) couples at high FL man
FL woman	-0.0154		0.00962	0.00962	0.00962	0.0849*	-0.0259
	(0.0190)		(0.0190)	(0.0190)	(0.0190)	(0.0492)	(0.0274)
age woman	-0.00251*		0.00551	0.00551	0.00551	0.00551	0.00551
	(0.00130)		(0.00414)	(0.00414)	(0.00414)	(0.00414)	(0.00414)
med. educ. woman	0.0308		-0.0377	-0.0377	-0.0377	-0.0377	-0.0377
	(0.0458)		(0.0434)	(0.0434)	(0.0434)	(0.0434)	(0.0434)
high educ. woman	0.00887		0.00422	0.00422	0.00422	0.00422	0.00422
	(0.0434)		(0.0500)	(0.0500)	(0.0500)	(0.0500)	(0.0500)
year dummy 2012	-0.0825**	-0.0132	0.00638	0.00638	0.00638	0.00638	0.00638
	(0.0342)	(0.0347)	(0.0331)	(0.0331)	(0.0331)	(0.0331)	(0.0331)
Δlog(income single)	0.0224	0.322***					
	(0.0469)	(0.0971)					
log(HH size)	0.0280	-0.0484	5.25e-05	5.25e-05	5.25e-05	5.25e-05	5.25e-05
	(0.0700)	(0.0658)	(0.0595)	(0.0595)	(0.0595)	(0.0595)	(0.0595)
FL man		0.0218	-0.0150	0.0450	-0.0658*	-0.0150	-0.0150
		(0.0187)	(0.0204)	(0.0370)	(0.0395)	(0.0204)	(0.0204)
age man		-0.00377***	-0.00509	-0.00509	-0.00509	-0.00509	-0.00509
		(0.00125)	(0.00407)	(0.00407)	(0.00407)	(0.00407)	(0.00407)
med. educ. man		-0.0279	-0.0386	-0.0386	-0.0386	-0.0386	-0.0386
		(0.0452)	(0.0445)	(0.0445)	(0.0445)	(0.0445)	(0.0445)
high educ. man		-0.00340	-0.0470	-0.0470	-0.0470	-0.0470	-0.0470
		(0.0472)	(0.0476)	(0.0476)	(0.0476)	(0.0476)	(0.0476)
Δlog(income couple)			0.0187	0.0187	0.0187	0.0187	0.0187
			(0.104)	(0.104)	(0.104)	(0.104)	(0.104)
Observations	661	488	1154	1154	1154	1154	1154

What about FL?

VARIABLES	(1) single females	(2) single males	(3) couples unconditional	(4) couples at low FL woman	(5) couples at high FL woman	(6) couples at low FL man	(7) couples at high FL man
FL woman	-0.0154		0.00962	0.00962	0.00962	0.0849*	-0.0259
	(0.0190)		(0.0190)	(0.0190)	(0.0190)	(0.0492)	(0.0274)
age woman	-0.00251*		0.00551	0.00551	0.00551	0.00551	0.00551
	(0.00130)		(0.00414)	(0.00414)	(0.00414)	(0.00414)	(0.00414)
med. educ. woman	0.0308		-0.0377	-0.0377	-0.0377	-0.0377	-0.0377
	(0.0458)		(0.0434)	(0.0434)	(0.0434)	(0.0434)	(0.0434)
high educ. woman	0.00887		0.00422	0.00422	0.00422	0.00422	0.00422
	(0.0434)		(0.0500)	(0.0500)	(0.0500)	(0.0500)	(0.0500)
year dummy 2012	-0.0825**	-0.0132	0.00638	0.00638	0.00638	0.00638	0.00638
	(0.0342)	(0.0347)	(0.0331)	(0.0331)	(0.0331)	(0.0331)	(0.0331)
Δlog(income single)	0.0224	0.322***					
	(0.0469)	(0.0971)					
log(HH size)	0.0280	-0.0484	5.25e-05	5.25e-05	5.25e-05	5.25e-05	5.25e-05
	(0.0700)	(0.0658)	(0.0595)	(0.0595)	(0.0595)	(0.0595)	(0.0595)
FL man		0.0218	-0.0150	0.0450	-0.0658*	-0.0150	-0.0150
		(0.0187)	(0.0204)	(0.0370)	(0.0395)	(0.0204)	(0.0204)
age man		-0.00377***	-0.00509	-0.00509	-0.00509	-0.00509	-0.00509
		(0.00125)	(0.00407)	(0.00407)	(0.00407)	(0.00407)	(0.00407)
med. educ. man		-0.0279	-0.0386	-0.0386	-0.0386	-0.0386	-0.0386
		(0.0452)	(0.0445)	(0.0445)	(0.0445)	(0.0445)	(0.0445)
high educ. man		-0.00340	-0.0470	-0.0470	-0.0470	-0.0470	-0.0470
		(0.0472)	(0.0476)	(0.0476)	(0.0476)	(0.0476)	(0.0476)
Δlog(income couple)			0.0187	0.0187	0.0187	0.0187	0.0187
			(0.104)	(0.104)	(0.104)	(0.104)	(0.104)
Observations	661	488	1154	1154	1154	1154	1154

So far

- Positive association between FL of men or women with household stock/bond ownership
- Men or women (independent of partner's FL): a higher level of FL enhances association between their FL and stock/bonds ownership
- If partner has low FL, then a higher level in own FL associated with higher P(stocks/bonds)
- Woman + not so literate man associated with positive consumption growth
- Man + Literate woman associated with negative consumption growth

Current work

- Deriving closed form solution for consumption allowing for patience and impatience using exponential preferences (following Caballero 1990)
- Create a more plausible financial literacy index (PCA)
- Finding instruments for financial literacy
- Taking into account risk aversion

References

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Interest compounding

Suppose you have 100 euros on a savings account and the interest is 2% per year. How much do you think you will have on the savings account after five years, assuming that you leave all your money on this savings account: more than 102 euros, exactly 102 euros, less than 102 euros?

1 more than 102 euros
2 exactly 102 euros
3 less than 102 euros
4 I don't know
5 I would rather not say

Inflation

Suppose that the interest on your savings account is 1% per year and that inflation amounts to 2% per year. After 1 year, would you be able to buy more, exactly the same, or less than you could today with the money on that account?

1 more than today
2 exactly the same as today
3 less than today
4 I don't know
5 I would rather not say

Understanding risk

A share in a company usually offers a more certain return than an investment fund that only invests in shares.

1 true
2 not true
3 I don't know
4 I would rather not say

Bonds and interest rates

If the interest rate goes up, what should happen to bond prices?

1 they should increase
2 they should decrease
3 they should stay the same
4 none of the above
5 I don't know
6 I would rather not say

Estimating the log-linearized Euler equation

For couples:

$$\Delta \log(HC_{i\,t+1}) = \beta_0 + \beta_1 FL^{Woman}_{it+1} + \beta_2 FL^{Man}_{it+1} + \beta_3 FL^{Woman}_{it+1} * FL^{Man}_{it+1} + \beta_4 \Delta \log(Hinc_{i\,t+1}) + \beta_5 year2010 + \delta' X'_{it+1} + u_{i\,t+1}$$

Euler equation with exponential preferences

$$e^{-\theta c_t} = \left(\frac{1 + r(\varphi)}{1 + \rho}\right)^{\tau - t} E_t\left[e^{-\theta c_\tau}\right]$$

Current and Savings accounts

Dependent variable		unconditional	low FL woman	high FL woman	low FL man	high FL man
Accounts	$\frac{\partial P}{\partial FL_{woman}}$	0.00137	0.00265	-0.000554	0.0288	-0.00470
		(0.00500)	(0.00521)	(0.00510)	(0.0179)	(0.00401)
	$\frac{\partial P}{\partial FL_{man}}$	0.0168***	0.0267***	0.00411	0.0371**	0.00675***
		(0.00500)	(0.00808)	(0.00932)	(0.0172)	(0.00153)

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What about the PIH?

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	(0.0190)		(0.0190)	(0.0190)	(0.0190)	(0.0492)	(0.0274)
age woman	-0.00251*		0.00551	0.00551	0.00551	0.00551	0.00551
	(0.00130)		(0.00414)	(0.00414)	(0.00414)	(0.00414)	(0.00414)
med. educ. woman	0.0308		-0.0377	-0.0377	-0.0377	-0.0377	-0.0377
	(0.0458)		(0.0434)	(0.0434)	(0.0434)	(0.0434)	(0.0434)
high educ. woman	0.00887		0.00422	0.00422	0.00422	0.00422	0.00422
	(0.0434)		(0.0500)	(0.0500)	(0.0500)	(0.0500)	(0.0500)
year dummy 2012	-0.0825**	-0.0132	0.00638	0.00638	0.00638	0.00638	0.00638
	(0.0342)	(0.0347)	(0.0331)	(0.0331)	(0.0331)	(0.0331)	(0.0331)
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log(HH size)	0.0280	-0.0484	5.25e-05	5.25e-05	5.25e-05	5.25e-05	5.25e-05
	(0.0700)	(0.0658)	(0.0595)	(0.0595)	(0.0595)	(0.0595)	(0.0595)
FL man		0.0218	-0.0150	0.0450	-0.0658*	-0.0150	-0.0150
		(0.0187)	(0.0204)	(0.0370)	(0.0395)	(0.0204)	(0.0204)
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		(0.00125)	(0.00407)	(0.00407)	(0.00407)	(0.00407)	(0.00407)
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high educ. man		-0.00340	-0.0470	-0.0470	-0.0470	-0.0470	-0.0470
		(0.0472)	(0.0476)	(0.0476)	(0.0476)	(0.0476)	(0.0476)
Δlog(income couple)			0.0187	0.0187	0.0187	0.0187	0.0187
			(0.104)	(0.104)	(0.104)	(0.104)	(0.104)
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