FIE401 - Third assignment
Does financial literacy cause participation in the stock market?

Group 08

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Abstract

In this assignment we inspect a paper by van Rooij et.al. and try to answer the question whether financial literacy has an effect on stock market participation. Findings indicate that parental financial knowledge as well as the economic situation of siblings are relevant instruments.These are then used to find the casual effect by applying instrumental variable regression because of expected endogeneity problems. We find that financial literacy indeed has a positive effect on stock market participation, which is inline with the findings of the inspected paper.

Task 1

Table 1: Summary statistics

Statistic	Min	Pctl(25)	Mean	Pctl(75)	Max	St. Dev.
numkids	0	0	0.711	2	7	1.073
dum_selfempl	0	0	0.052	0	1	0.222
tot_non_equity_wealth_cat	1	2	2.738	4	4	1.069
lincome	7.244	9.720	10.052	10.387	13.828	0.550
indexlit1_new1	−2.920	−0.445	0.000	0.759	1.024	1.026
indexlit2_new1	−4.680	−0.146	0.000	0.792	0.792	1.237
edu1	0	0	0.044	0	1	0.206
edu2	0	0	0.229	0	1	0.420
edu3	0	0	0.195	0	1	0.396
edu4	0	0	0.137	0	1	0.344
edu5	0	0	0.263	1	1	0.441
edu6	0	0	0.131	0	1	0.337
retired	0	0	0.200	0	1	0.400
dstocks_mut	0	0	0.287	1	1	0.452

sibling_fin_sit	parent_fin_knowledge	self_assessed_literacy	economics_education
better :844	dont know : 111	5 :499	a lot :242
no sibling:365	intermediate or high:1173	4 :366	hardly at all:294
worse :299	low : 224	6 :355	little :410
		3 :137	some :562
		2 : 56	
		7 zeer goed: 45	
		(Other) : 50	

daily_use_economics	age	partner	male
a lot :221	<30:136	Ja :1032	female:674
hardly at all:109	>60:400	Nee: 476	male :834
little :447	30s:319		
some :731	40s:325		
	50s:328		

Task 2

Brief comment on the First stage regression:

From the first stage regression we can observe that sibling's financial situation is negatively correlated with the respondent's financial literacy. In other words, if you consider your sibling(s) to be in a worse financial situation, you are more likely to have higher financial knowledge. Parental knowledge of financial matters is also negatively correlated with the respondents financial knowledge.

Intrepretation:

The interpretation of the regression coefficient is the following, if we increase the literacy index by 1 unit then the probability of participation increases by 18,36%.

Table 4: Three estimated models

	Dependent variable:		
	dstocks_mut	indexlit1_new1	dstocks_mut
	OLS	*OLS*	*instrumental variable*
	(1)	(2)	(3)
indexlit1_new1	0.085*** t = 6.947		0.184
sibling_fin_sitno sibling		−0.113 t = −1.532	
sibling_fin_sitworse		0.182*** t = 3.350	
parent_fin_knowledgeintermediate or high		0.361*** t = 2.970	
parent_fin_knowledgelow		0.560*** t = 4.063	
age>60	0.070 t = 1.171	−0.015 t = −0.110	0.073 t = 0.535
age30s	0.011 t = 0.233	−0.108 t = −0.948	0.024 t = 0.209
age40s	0.038 t = 0.779	−0.169 t = −1.530	0.057 t = 0.512
age50s	0.025 t = 0.507	−0.058 t = −0.507	0.032 t = 0.281
numkids	0.002 t = 0.131	−0.020 t = −0.666	0.004 t = 0.139
tot_non_equity_wealth_cat	0.051*** t = 3.687	0.138*** t = 4.553	0.037 t = 1.221
lincome	0.084*** t = 3.146	0.023 t = 0.403	0.079 t = 1.364
malemale	0.069** t = 2.510	0.377*** t = 6.430	0.034 t = 0.577
partnerNee	0.026 t = 0.833	0.132** t = 1.995	0.013 t = 0.191
edu2	−0.056 t = −0.900	0.071 t = 0.459	−0.065 t = −0.424
edu3	−0.026 t = −0.403	0.107 t = 0.680	−0.040 t = −0.254
edu4	−0.026 t = −0.375	0.356** t = 2.272	−0.063 t = −0.403
edu5	0.010	0.295*	0.013

The IV-regression gives us a diffferent/correct probability of participation of 18,36% which is different to the OLS probability of participation of 8.5%.

With a t-value of 2.136 the literacy index is statistically significantly different from 0 on 5% niveau. Also, 18% more participation in the stock market is relevant and therefore economically significant.

Task 3

What reasons do the authors name for using an Instrumental Variable approach?

The authors suspect endogoneity, mainly because of measurement error in literacy index since responses might be imprecise and may result from guessing. But there may also be learning and improvement in knowledge, which leads to upward bias.

How do the authors abstract the estimates obtained using OLS and IV? In page 461 the authors demonstrate the different caterogies of variables included in the study. Some are dummys some are categorical variables.

How do the authors discuss relevancy? (F-statistic)

The authors discuss relevancy simply by the significance of the instruments and the high F-statistic shown in table 8A

After reading the authors explanations, are you convinced that both instruments are valid? (Exogeneity)

We are convinced that the instruments are relevant, since it is reasonable that knowledge of parents or financial well being of siblings is correlated with the literacy index.

But we are not completely convinced that the instruments fullfill exogeneity. So instruments are likely correlated with the error term.