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**DOES FINANCIAL LITERACY OF PARENTS MATTER FOR
THE EDUCATIONAL OUTCOME OF CHILDREN?**

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Does financial literacy of parents matter for the educational outcome of children?

by

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Abstract

In this paper we analyse the academic outcomes of children and we correlate them to the educational level of their parents, including financial literacy as one of the main determinants. Financial literacy might increase the consciousness of the return to education, increasing the willingness to send children to further education. Our empirical results indeed prove that this is the case for Italian households.

Keywords: financial literacy, education, human capital

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1. Introduction

The growth of a country relies on human capital. The dynamics behind human capital accumulation are, however, very subtle and difficult to disentangle. From a strict economic point of view, the number of years of education, which proxy the concept of human capital, is chosen to maximise the net return. Return to human capital, just to quote the monetary dimension, is due to the additional wage corresponding to additional years of education (Mincer, 1974). Educational choices are, up to a certain age, at least, a choice of the parents until the child is grown-up. The educational outcome is thus combining two different preferences and sets of knowledge: the one of the parents and the one of the (grown-up) child. What affects the knowledge of the returns to education? Is financial literacy a key ingredient to make people more aware of the school return?

A great deal of empirical literature has focused on the impact of financial literacy on financial choices, particularly looking at retirement decisions with reference to the US (Lusardi and Mitchell, 2011). Little attention has been devoted by literature to a different aspect that financial knowledge might have an impact on: human capital. Despite the importance of human capital, little is known on whether having better knowledge of the trade off an additional year of education implies, which in turn could be proxied by financial literacy, has an impact on human capital formation. Our goal is to fill this gap.

Our empirical analysis aims to detect whether financial literacy increases the consciousness of the return to education, positively influencing the willingness of parents to send their children to university. We found indeed that the probability of attending a university degree course is higher if the head of the family is financially literate.

The rest of the paper is organized as follows. Section 2 describes the data, section 3 sets out the empirical strategy and shows the empirical results, and section 4 concludes.

2. Data and Descriptive Statistics

The dataset used is the SHIW, which is conducted every two years by the Bank of Italy and contains detailed information on households' socio-economic characteristics. We used the 2008 and 2010 waves.

In order to assess the correlation between parents' financial literacy and children's education, we restrict our sample to children aged from 19 to 22 belonging to a non-single family. In our sample, the percentage of young attending a university degree course is 44%.

Table 1 shows the descriptive statistics of the sample.

3. Empirical Strategy and Estimation Results

Our empirical analysis investigates whether having financially literate parents has a positive effect on the educational level attained by children. Financial education might increase the consciousness of the return to education, increasing the willingness to send children to further education after secondary school.

Our empirical strategy consists in estimating the following model:

$$Education_{it} = \beta_0 + \beta_1 Financial\ literacy_{it} + \beta_2 C_{it} + \varepsilon_{it}$$

where i indicates the individual specific variable and t represents the year. *Education* is a dummy variable indicating whether a child is attending university and *Financial literacy* is the financial knowledge of the head of the household to which individual i belongs. C stands for controls.

To evaluate financial knowledge, heads of households were asked three questions checking basic knowledge of economics and finance concepts, such as simple calculations about interest rates and inflation and the workings of mortgages and risk diversification¹.

Following Lusardi and Mitchell (2011), we use as a measure of financial literacy a first indicator equal to 1 if the respondent answers all the three questions correctly (and 0 otherwise), and a second indicator that is the number of each respondent's correct answers to the financial literacy questions (0–3). Table 2 reports the answers to the financial literacy questions, showing that 71%, 62% and 48% of the household heads gave the correct answer to the questions on inflation, floating-rate versus fixed-rate mortgages and risk diversification, respectively. Interestingly, the percentage of respondents giving the correct answer about mortgages increases up to three-fourth if we consider just households having loans for the purchase or renovation of the principal residence or other properties. Hence, as suggested by Fornero and Monticone (2011), contracting housing debts may provide a learning opportunity. As far as risk diversification is concerned, almost one-fourth of the respondents gave the wrong answer and another one-fourth said they do not know the answer. These results are consistent with a low stock market participation rate and scarce familiarity with risky assets in Italy. Overall, the level of financial literacy is quite low, since only 32% of respondents answered all three questions correctly and 15% gave no correct answers (panel D). In addition, respondents frequently stated that they did not know the answer, an indicator of very low financial knowledge (Lusardi and Mitchell, 2014). Comparing the answers to the three questions, Italians seem to be more familiar with the concept of inflation. This may be related to individual

¹ <https://www.bancaditalia.it/statistiche/tematiche/indagini-famiglie-impresa/bilanci-famiglie/index.html?com.dotmarketing.htmlpage.language=1> for the exact question wording.

memories of an inflationary environment, as a large share of the sample experienced relatively high inflation in the 1970s and 1980s (Fornero and Monticone, 2011). In line with other studies, the least known topic among Italian households is risk diversification.

In Table 3, the correlation between the probability of attending university and the level of financial literacy of parents is estimated using a pooled OLS model (first column) and a random effect model (second column). Our dependent variable is the dummy indicating whether a child from 19 to 22 years old is attending a university degree course. Estimates show that financial literacy boosts the child's university attendance².

In the third column of Table 3, we propose two instruments in order to account for the potential endogeneity of financial literacy. In particular, we use the average level of financial literacy by age, and the bank branches densities per 10,000 inhabitants by region. The validity of the latter instrument rests on the hypothesis that a greater exposure to financial institutions like banks makes it easier for respondents to acquire financial knowledge, while it does not have a direct effect on the probability of a child of being enrolled. This is supported by the result of the Sargan statistic, which does not reject the null of instruments validity (P -value 0.21). Moreover, the F test measuring the predictive power of the instruments in the first stage regression is relatively high (greater than 10), suggesting that instruments are not weak. First stage estimates are reported in column 4 of Table 3. Using instrumental variables, we still have a positive correlation between the level of financial literacy of the head of the household and the probability of a child of attending university.

In order to estimate this correlation, many controls were introduced. The education of parents is included among regressors. In particular, both dummies for parents' tertiary education have a positive effect on the dependent variable, and financial literacy is statistically significant, ruling out the possible effect of financial literacy through the channel of parents' education, positively correlated with both child education and parents' financial knowledge. Results are confirmed when we use another measure of financial literacy, the number of correct answers (Table 4).

4. Concluding Remarks

In this paper, we found that financial literacy of parents is positively correlated with the educational outcome of children. In particular, the probability of university or college attendance increases with the level of financial literacy of the household head. It could be that financial literacy increases the consciousness of the return to education, increasing the willingness to send children to further education.

² Using a Probit model, so as to allow for the dichotomous nature of the dependent variable, results do not change.

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Table 1

	Mean	Std. dev.	Min	Max	Observations
Male	0.508	0.500	0	1	1457
Dummy university	0.445	0.497	0	1	1457
Age	20.444	1.119	19	22	1457
Northern Italy	0.361	0.480	0	1	1457
Central Italy	0.167	0.373	0	1	1457
Southern Italy	0.472	0.499	0	1	1457
Household size	4.134	0.871	3	8	1457
Tertiary education of male spouse/partner	0.105	0.307	0	1	1457
Tertiary education of female spouse/partner	0.092	0.289	0	1	1457
Payroll income	42284.81	26912.88	-49.366	232443.4	1457
Wealth to income ratio	6.644	99.450	-2046	1500	1457
Bank branches per 10,000 inhabitants	5.249	1.904	2.593	9.417	1457
Age of male spouse/partner	52.469	5.816	35	83	1457
Age of female spouse/partner	48.921	5.332	27	66	1457

Table 2

	All household heads (%)
<i>Panel A - Inflation</i>	
Yes	5.13
No, I will be able to buy less	71.30
No, I will be able to buy more	2.62
Don't know	20.03
No answer	0.92
<i>Panel B - Mortgage</i>	
Floating-rate mortgage	5.27
Fixed-rate mortgage	62.38
Floating-rate mortgage with fixed installments	8.13
Don't know	22.73
No answer	1.49
<i>Panel C - Risk diversification</i>	
Investing in the shares of a single company	48.49
Investing in the shares of more than one company	23.53
Don't know	25.58
No answer	2.40
<i>Panel D - Overall performance</i>	
All answers correct	32.36
No correct answer	15.09
At least one "Don't know"	38.02
All "Don't know"	9.54
Observations	15,922

Weighted data. Correct answers are in bold.

Table 3

	Dummy university	Dummy university	Dummy university	Financial literacy (All three answers correct)
	OLS pooled	RE	IV	First stage
Financial literacy (All three answers correct)	0.111*** (3.89)	0.0801*** (3.42)	0.463** (2.05)	
Male	-0.167*** (-6.00)	-0.173*** (-6.67)	-0.154*** (-5.12)	-0.0335 (-1.31)
Household size	-0.0233 (-1.47)	-0.0267* (-1.82)	-0.0223 (-1.43)	0.0138 (0.91)
Tertiary education of male spouse/partner	0.268*** (6.30)	0.298*** (5.99)	0.238*** (4.95)	0.0757 (1.53)
Tertiary education of female spouse/partner	0.285*** (6.32)	0.271*** (5.25)	0.306*** (6.42)	-0.0545 (-1.06)
Payroll income	-0.000000855 (-1.05)	-0.000000716 (-0.92)	-0.00000103 (-1.24)	-0.000000131 (-0.16)
Payroll income squared	0.0000502* (1.85)	0.0000343* (1.89)	0.0000260 (0.90)	0.0000680*** (3.37)
Wealth to income ratio	-0.000114*** (-3.27)	-0.000120 (-0.99)	-0.000143 (-1.28)	0.0000424 (0.34)
Bank branches per 10 000 inhabitants				0.0325*** (4.46)
Average financial literacy by age				9.065** (2.06)
Observations	1457	1457	1457	1457

Marginal effects; *t* statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4

	Dummy university OLS pooled	Dummy university RE	Dummy university IV	Number of correct answers First stage
Number of correct answers	0.0609*** (4.35)	0.0434*** (3.53)	0.187* (1.89)	
Male	-0.168*** (-6.08)	-0.175*** (-6.75)	-0.164*** (-5.84)	-0.0214 (-0.43)
Household size	-0.0206 (-1.31)	-0.0249* (-1.70)	-0.0146 (-0.91)	-0.0104 (-0.35)
Tertiary education of male spouse/partner	0.269*** (6.33)	0.298*** (6.00)	0.250*** (5.63)	0.129 (1.33)
Tertiary education of female spouse/partner	0.281*** (6.22)	0.269*** (5.20)	0.288*** (6.38)	-0.0447 (-0.44)
Payroll income	-0.000000930 (-1.15)	-0.000000760 (-0.98)	-0.00000120 (-1.47)	0.000000414 (0.26)
Payroll income squared	0.0000495* (1.82)	0.0000343* (1.89)	0.0000321 (1.14)	0.000130*** (3.35)
Wealth to income ratio	-0.000125*** (-3.27)	-0.000129 (-1.05)	-0.000167 (-1.48)	0.000236 (0.98)
Bank branches per 10 000 inhabitants				0.0802*** (5.65)
Average financial literacy by age				14.32* (1.69)
Observations	1457	1457	1457	1457

Marginal effects; *t* statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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