

# Financial Literacy and Pension Plan Participation in Italy

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## Motivation and aim

Financial literacy is becoming increasingly relevant because

- ▶ Pension reforms are increasing individual freedom of choice but also *individual responsibility*, and are *transferring risks to individuals*
- ▶ Little familiarity with financial products, in a context of increasing financial complexity

This paper assesses the current level of financial literacy and investigates its distribution among the Italian population. Moreover, it examines the role of financial literacy on retirement planning, focusing on pension plan participation, also in relation to the 2007 severance pay reform

# Data

- ▶ Bank of Italy's Survey on Household Income and Wealth (SHIW). 2006 wave: first time FL is investigated in the SHIW
- ▶ A random subsample (3,992 households) answered a battery of financial literacy tests
- ▶ Only household heads answer financial literacy task (i.e. the person primarily responsible for the household budget)
- ▶ 80% CAPI; No incentives

# Financial literacy questions

**Interest** Imagine leaving 1,000 euros in a current account that pays 2% annual interest and has no charges. What sum do you think will be available at the end of 2 years?

*Less than 1,020 euros | Exactly 1,020 | More than 1,020 | Don't know*

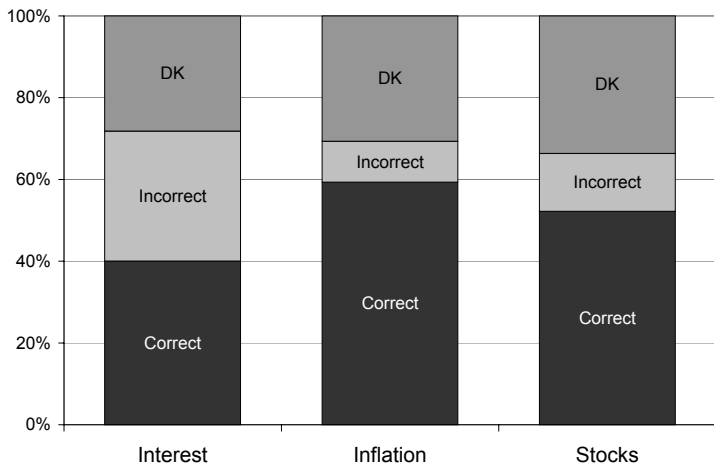
**Inflation** Imagine leaving 1,000 euros in a current account that pays 1% interest and has no charges. Imagine also that inflation is running at 2%. Do you think that if you withdraw the money in a year's time you will be able to buy the same amount of goods as if you spent the 1,000 euros today?

*Yes | No, I will buy less | No, I will buy more | Don't know*

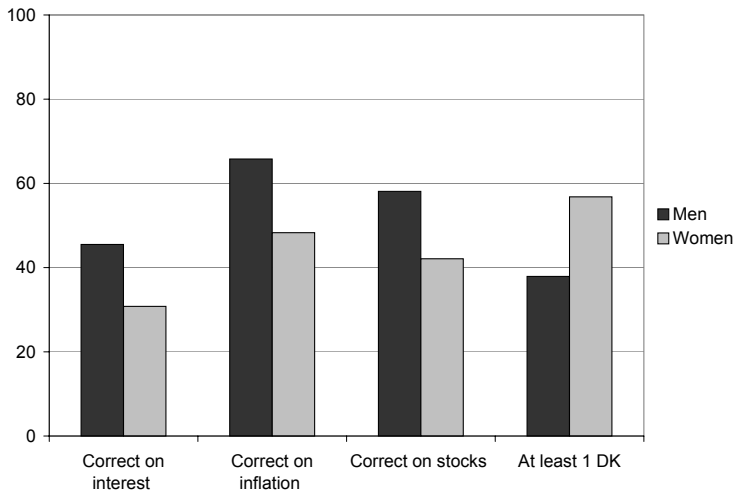
**Stocks** Imagine you have only equity funds and stock market prices fall. Are you...?

*Better off | Worse off | As well off as before | Don't know*

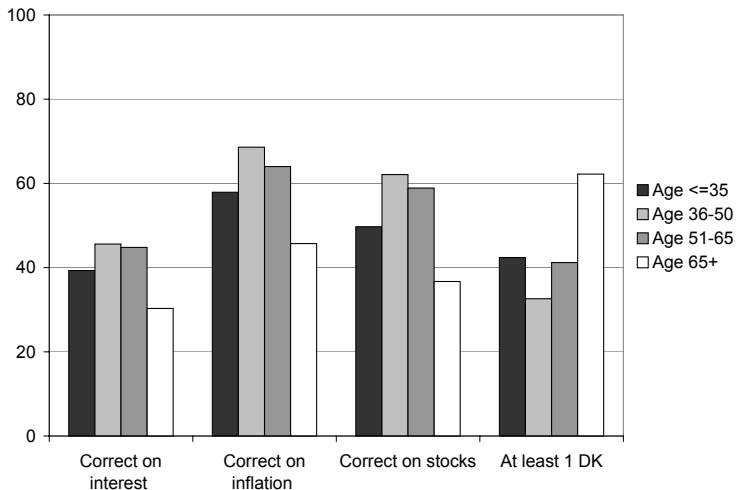
# Descriptive statistics



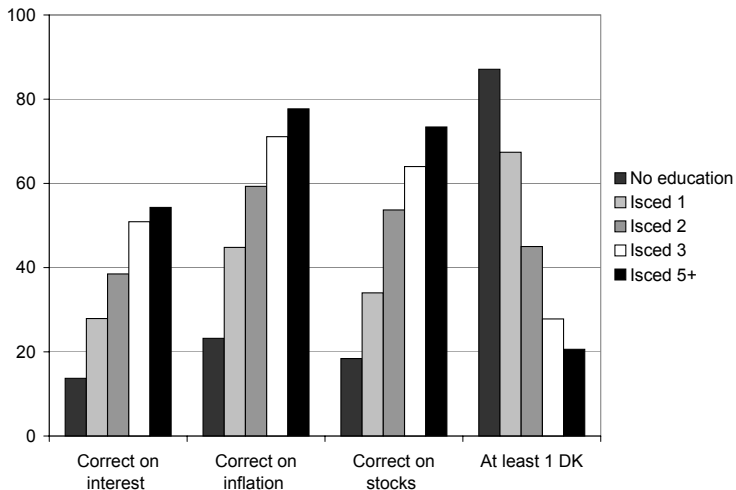
# Who knows the least?



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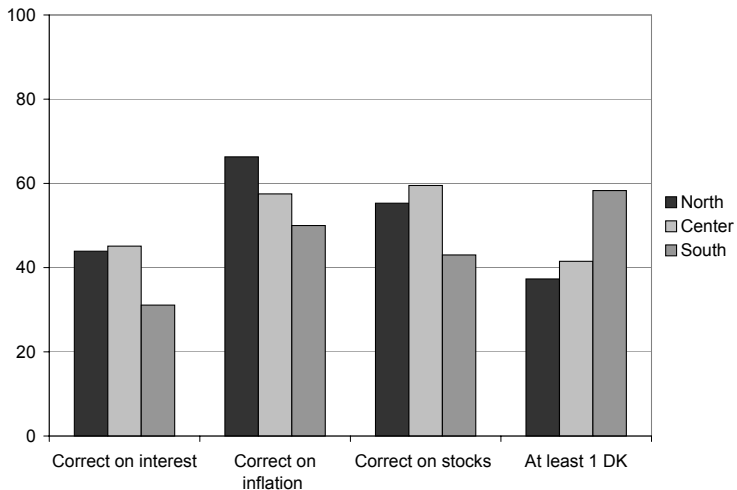


# Who knows the least?





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# Does financial literacy matter?

- ▶ No question on planning for retirement as in the HRS/FCS
- ▶ Pension plan participation in 2006 (before the reform)
- ▶ Robustness checks:
  - ▶ Financial literacy endogeneity
  - ▶ Pension plan participation in the 2007 reform

# Pension plan participation

**Table:** Probit regression (marginal effects). Probability of participating to a pension plan

	I	II	III
Number correct	0.019***		
Three correct		0.028**	
Correct on Interest			0.035***
Correct on Inflation			-0.006
Correct on Stocks			0.020*
N obs	1809	1809	1809

Source: SHIW 2006. Probit regression. Robust std errors. Weighted data. Significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Sample: household heads who work as employees. Additional controls: age, gender, single, household components, years of schooling, occupational status (dummies white-collar, managers, entrepreneurs, other self employed), public sector, macro-region dummies, household income quartiles, household financial wealth quintiles, dummy for being very risk tolerant, expected replacement rate from social security, expected retirement age.

# Financial literacy endogeneity

Table: GMM regression. Probability of participating to a pension plan

	GMM I		GMM II	
	First stage	Second stage	First stage	Second stage
Three correct		0.509***		
Number correct				0.280**
<i>Instruments</i>				
Unions members	0.000		0.001	
Association members	0.019**		0.029*	
N obs	1809	1809	1809	1809
F of excluded instr.		7.507		7.283
Hansen J		0.157		0.299
Hansen J p-value		0.692		0.584

Source: SHIW 2006. Probit regression. Std errors robust to heteroskedasticity and clustering on regions. Weighted data. Significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Sample: household heads who work as employees. Additional controls: Age, gender, dummy singles, household components, years of schooling, occupational status (dummies for white-collar, managers, entrepreneurs, other self employed), dummy public sector employee, macro-region, household income quartiles, household financial wealth quintiles, dummy for being very risk tolerant, expected replacement rate from social security, expected retirement age. Instruments: Unions members (% active) in the region, participation to associations in the region.

## 2007 Reform: TFR destination

Table: TFR destination (SHIW 2008)

	Freq.	Percent
TFR $\Rightarrow$ pension funds	393	10.6
TFR $\Rightarrow$ firm	3026	81.7
TFR $\Rightarrow$ do not know	285	7.7
N	3,704	100

Source: SHIW 2008. Weighted data. Sample: all household members working as employees.

## 2007 Reform: TFR destination

**Inflation** Imagine leaving 1,000 euros in a current account that pays 1% interest and has no charges. Imagine also that inflation is running at 2%. Do you think that if you withdraw the money in a year's time you will be able to buy the same amount of goods as if you spent the 1,000 euros today? *Yes* | *No, I will buy less* | *No, I will buy more* | *Don't know* 73% Correct | 7% Incorrect | 20% DK

**Risk HRS** Which of the following investment strategies do you think entails the greatest risk of losing your capital? *Investing in the shares of one company* | *Investing in the shares of more than one company* | *Don't know* 45% Correct | 26% Incorrect | 28% DK

**Risk 2** A company can be financed by issuing either shares (equity securities) or bonds (debt securities). Which do you think is most risky for the investor? *Shares* | *Bonds* | *They are equally risky* | *I don't know the difference between shares and bonds* | *Don't know* 34% Correct | 34% Incorrect | 32% DK

## 2007 Reform: TFR destination

**Table:** Probit regression (marginal effects). Probability of transferring one's own TFR to a pension plan

	TFR in pension fund		TFR in pension fund (including DK)	
	I	II	III	IV
Correct on inflation	0.004		-0.075***	
Correct on risk (HRS)	0.028**		0.019	
Correct on risk 2	-0.001		0.008	
Number correct		0.012**		-0.006
N obs	3449	3449	3704	3704

Source: SHIW 2006. Probit regression. Std errors robust to heteroskedasticity and clustering on households. Weighted data. Significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Sample: working as employees. Additional controls: Age, gender, dummy singles, household components, years of schooling, occupational status (dummies white-collar, managers), macro-region dummies (north and center), household income quartiles, household financial wealth quintiles, dummy for being very risk tolerant, expected replacement rate from social security, expected retirement age, pension funds knowledge, sector dummies.

## Concluding remarks

- ▶ Scarce literacy is consistent with a pension system that in the past required little discretionary saving. Thus, more financial knowledge is needed by young generations to manage their retirement wealth
- ▶ Significant heterogeneity with respect to socio-demographic characteristics: gender, age/cohorts, education, north/south
- ▶ Financial literacy increases the probability of participating to a pension fund, also after controlling for financial literacy endogeneity. When analyzing employees' response to the 2007 reform, financial literacy increases workers' probability of transferring their TFR flows to a pension fund (at least for those who did so willingly).



# Appendix

## Descriptive statistics

**Table:** Answers to financial literacy questions

		Freq.	Percent
Interest	Correct	1,598	40.02
	Incorrect	1,269	31.79
	DK	1,125	28.19
Inflation	Correct	2,367	59.30
	Incorrect	399	10.00
	DK	1,225	30.70
Stocks	Correct	2,083	52.17
	Incorrect	566	14.17
	DK	1,344	33.66

Source: SHIW 2006 – Weighted data

# Appendix

## Descriptive statistics

**Table:** Correlation of the answers across the questions

	Interest	Inflation	Stocks	N correct
Correct on interest	1			
Correct on inflation	0.3285 0.000	1		
Correct on stocks	0.3243 0.000	0.4649 0.000	1	
Number of correct	0.7201 0.000	0.7823 0.000	0.7857 0.000	1

Source: SHIW 2006 – Weighted data

# Appendix

## Descriptive statistics

**Table:** Correlation of the answers across the questions

	Freq.	Percent
Correct answers to interest and inflation	1,258	31.51
All answers correct	993	24.88
No correct answer	1,055	26.43
At least one “do not know”	1,791	44.88
All “do not know”	796	19.93

Source: SHIW 2006 – Weighted data

# Appendix

## Who knows the least?

**Table:** Financial literacy by socio-demographics

	Interest		Inflation		Stocks		Overall	
	Correct	DK	Correct	DK	Correct	DK	Three Correct	At least 1 DK
Age $\leq 35$	39.3	27.2	57.9	28.8	49.7	32.1	22.9	42.4
Age 36-50	45.6	16.2	68.6	19.9	62.1	23.1	30.3	32.6
Age 51-65	44.8	22.6	64	26.7	58.9	28.4	27.5	41.2
Age 65+	30.3	46.1	45.7	46.5	36.7	50	17.4	62.2
Men	45.5	21.3	65.8	24.2	58.1	28.2	29.5	37.9
Women	30.8	39.9	48.3	41.7	42.1	42.9	17	56.8
No education	13.7	72.2	23.2	72.7	18.4	75.2	7.2	87.1
Isced 1	27.9	47.8	44.8	47.5	34	52.6	13	67.4
Isced 2	38.5	24.7	59.3	29.8	53.7	32.5	22.2	45
Isced 3	50.9	14.7	71.1	17.5	64	18.8	35	27.8
Isced 5+	54.3	8.7	77.7	10.4	73.4	14.8	39.1	20.6

Source: SHIW 2006 – Weighted data

# Appendix

## Who knows the least? (Cont'd)

Table: Financial literacy by socio-demographics

	Interest		Inflation		Stocks		Overall	
	Correct	DK	Correct	DK	Correct	DK	Three Correct	At least 1 DK
Private employee	44.5	19.5	65.3	24.4	57.5	28.2	28.8	37.5
Public employee	46.5	11.8	70.3	17.1	66.5	15.5	28.7	29.3
Self-employed	49.8	9.7	73.1	14	66.8	16.7	30.8	24.6
Pensioner	34.5	41.7	50.6	41.3	41.4	46	20.7	57.4
Out of LF/Unempl	31.8	38.1	49.7	40.1	47.1	40	20.3	55.8
North	43.9	22.6	66.3	24.4	55.3	27.4	29.5	37.3
Center	45.1	24.3	57.5	29.8	59.5	27.6	27	41.5
South	31.1	38.9	50	40.5	43	46.8	16.7	58.3
House renter	29.7	35.7	48.5	39.6	39.1	43.7	14.9	54.2
Owner-no mortgage	41.9	27.8	61	29.9	53.2	33.2	26.7	44.2
Owner-mortgage	52.6	13.3	78.4	10.6	79.9	14.2	39.6	22.9

Source: SHIW 2006 – Weighted data. Note: “Owner-mortgage” indicates individuals currently paying a mortgage on their house. “Owner-no mortgage” indicates individuals (not) currently paying a mortgage (including those who never took out a mortgage, and those who already repaid it).

# Appendix

## Pension plan participation

**Table:** Pension plan participation in Italy before and after the reform

	as a % of total employment	as a % of employees
2006	13.9	13.4
2007	19.6	20.6
2008	20.7	21.5
2009	22.1	22

Source: own calculation on Covip (2008, 2009, 2010), Istat (2010).

# Appendix

## Pension plan participation

**Table:** Financial literacy and pension plan participation

		Pension plan (N = 199)	No plan (N = 1611)	t-test
Inflation	Correct	67.84	44.69	***
	Do not know	5.53	16.57	***
Interest	Correct	81.91	68.84	***
	Do not know	9.05	20.24	***
Stocks	Correct	78.39	59.28	***
	Do not know	13.57	22.72	***
Overall	Number correct	2.28	1.73	***
	3 correct	49.75	28.86	***
	At least one DK	17.59	32.9	***

Source: SHIW 2006 – Weighted data. Significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Sample: household heads who work as employees. Household heads that have a pension plan are more (less) likely to give a correct (do not know) answer.

# Appendix

## 2007 Reform: TFR destination

**Table:** Financial literacy and TFR destination

	TFR in PF	TFR not in PF	t-test	TFR in PF (including DK)	TFR not in PF	t-test
Inflation	90.21	81.77	***	79	81.77	
Risk (HRS)	67.78	51.94	***	57.54	51.94	***
Risk 2	52.06	40.67	***	45.26	40.67	**
3 Correct	42.53	29.73	***	34.21	29.73	**
N correct	2.1	1.74	***	1.82	1.74	*
N	388	3061		643	3061	

Source: SHIW 2008 – Weighted data. Sample: working as employees.