



AMF Scientific Advisory Board Conference

Financial education in the digital age: What are the challenges for investment?

Paris, Maison du Barreau – Monday, June 20th 2016

Financial Literacy in Europe

(Gianni Nicolini¹)



¹Associate professor of Finance University of Rome "Tor Vergata" (Rome, Italy) - Faculty of Economics mail: gianni.nicolini@uniroma2.it



Agenda



- 1 Financial literacy and financial behaviors
- The assessment of financial literacy
- Financial literacy in European countries
- Financial literacy and financial behaviors in European countries



Financial literacy and Financial behaviors



Financial Literacy

Knowledge and Ability

1992	"The ability to make informed judgements and to make effective decisions regarding the use and management of money" (Noctor, Stoney and Stradling 1992)	2007	"Financial literacy is the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial well-being" (US FLEC 2007, Jump\$tart Coalition 2007)
2000	"The ability to read, analyse, manage and communicate about the personal financial conditions that affect material wellbeing" (Vitt et al. 2000)	2010	"Financial literacy consists of both knowledge and application (ability) of human capital specific to personal finance" (Huston 2010)
2001	"Financial literacy is a basic knowledge that people need in order to survive in a modern society" (Kim 2001)	2010	"Financial literacy is a measure of the degree to which one understand key financial concepts (knowledge) and possesses the ability and confidence to manage personal finances through
2001	"Financial literacy is the ability to interpret, communicate, compute, develop independent judgement, and take actions resulting from those processes in order to thrive in our complex financial world" (Danes and Habermann 2007)		appropriate, short-term decision-making and sound, long-range financial planning, while mindful of life events and changing economic conditions" (Remund 2010)



Financial literacy and Financial behaviors



Financial Education



Financial Literacy

Knowledge and Ability



Financial Behavior



Personal and Social consequences



Financial literacy and Financial behaviors



Financial Education



Financial Literacy

Knowledge and Ability

-Stock market participation

Arrondel, Debbich, Savignac (2012) Van Rooij, Lusardi and Alessie (2011)

Yoong (2010)

)

-Use of Internet banking

Servon and Kaestner (2008)

-Asset Allocation

Agnew (2004)

Financial Behavior

-Credit cards

Kenner et all. (2001)

Grable and Bagweel (2003)

Lyons and Hunt (2003)

Jones (2005)

Lyons (2007)

Robb and Sharpe (2009)

Robb (2011)

-Pension Planning

D'Ambrosio (2003)

Clark et all. (2004)

Lusardi (2004)

Lusardi and Mitchell (2006, 2008)

Behrman et all. (2010)

Almenberg and Säve-Söderberg (2011)

-Bankruptcy

Thorne and Porter (2007)

-Subprime mortgage deliquency

Gerardi et all. (2010)

-Financial Stress

-Overindebtdness

Lusardi and Tufano (2009)





"How do we measure Financial Literacy?"







"How do we measure Financial Literacy?"



General issues



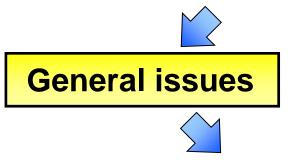
Specific focus







"How do we measure Financial Literacy?"







Hypothesis



A wide range of topics such as budgeting, saving, borrowing, investing, etc. must be analysed because all are relevant for consumers.



(Remund 2010; Chen and Volpe 2002; Financial Fitness for Life 2008; Jump\$tart Coalition for Personal Financial Literacy 2008; National Endowment for Financial Education 2006; National Foundation for Credit Counseling 2008; U.S. Department of Treasury 2006, FSA 2006, ANZ 2008)





"How do we measure Financial Literacy?"



Ceneral issues



Specific focus



Hypothesis





"Financial literacy should be tested against individuals' needs and circumstances, not against all available financial products and services since consumers will never need or use most of these products and services" (Worthington 2006)









Investment

Credit

Debt

(Jones 2005)

Stock Market (NASD 2003)

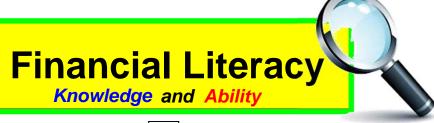
(Volpe, Chen and Pavlicko 1996) (Lusardi and Tufano 2009)

(Muller and Weber 2008)



















Compound interest

Question	Options
Suppose you had \$100 in a savings	More than \$102 (correct answer)
	Exactly \$102
account and the interest rate was 2% per	Less than \$102
year. After 5 years, how much do you think you would have in the account if	Don't know
you left the money to grow?	Prefer not to say



















Inflation

Question	Options
savings account was 1% per year 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
	Exactly the same
	Less than today (correct answer)
	Don't know
	Prefer not to say



















Bond pricing

Question	Options
	They will rise
If interest rates rise, what will typically happen to bond prices?	They will fall (correct answer)
	They will stay the same
	There is no relationship between bond prices and the interest rate
	Don't know
	Prefer not to say



















Mortgage

Question	Options
	True (correct answer)
A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over	False
	Don't know
the life of the loan will be less.	Prefer not to say



















Diversification

Question	Options
Buying a single company's	True
	False (correct answer)
stock usually provides a safer	Don't know
return than a stock mutual fund.	Prefer not to say





Financial Literacy

Knowledge and Ability











Fonseca et al., 2012

Almenberg & Widmark (2011a; 2011b)

Lusardi & Tufano (2008)

Lusardi & Mitchell (2011)

McCarthy (2011)

Pahnke & Honekamp (2010)

Hastings & Mitchell (2011)

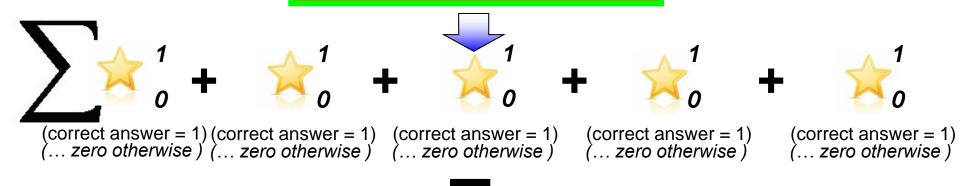
van Rooij, Lusardi, & Alessie (2011)





Financial Literacy

Knowledge and Ability



Financial Knowledge Index ...as sum of correct answers

Moore (2003)

Range [0;5]

Sabri *et al.* (2008)

Robb & Sharpe (2009)

Gerardi, Goette, & Meier (2010)

Agnew & Szkyman (2005)







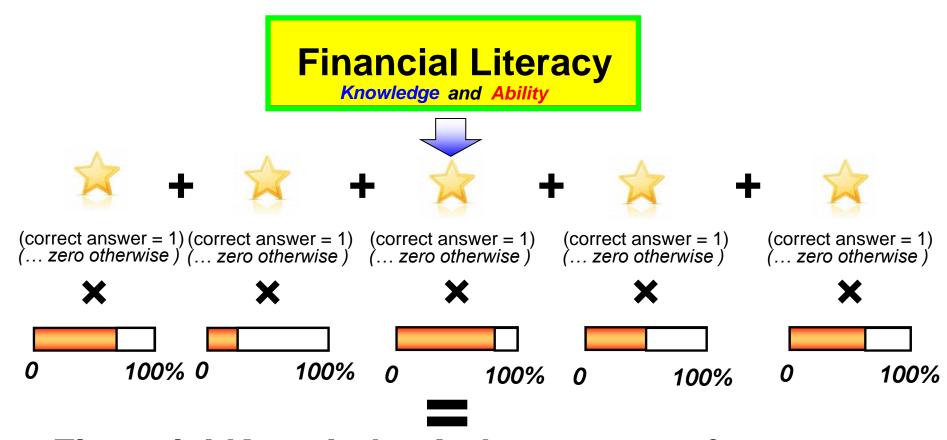
Are all the answers rights? Yes =1, No = 0 Dummy var [0;1]

Almenberg and Säve-Söderberg (2011)

Lusardi and Mitchell (2011)







Financial Knowledge Index as sum of correct answers... weighted by their difficulty

Lusardi, Mitchell, & Curto (2012)





"How do we measure Financial Literacy?"



"Are we measuring financial literacy in the best way?"





Do different topics have different relevance in difference countries?







Do different topics have different relevance in difference countries?







Are we using items (questions) with the same difficulty?







Are we using items (questions) with the same difficulty?

Difficulty of the question

Question

If
$$2+2 = X$$

$$A) X=0$$

$$C) X=4$$

Question

If
$$X = -3$$
 the value of

$$X - \sqrt{X^2}$$
 is equal to...

$$A) -6$$

$$\mathbf{C}$$
) -3





Are we using items (questions) with the same difficulty?

... and other technicalities... (wording, guessing, etc...)

Question

Buying a single company's stock usually provides a safer return than a stock mutual fund.

- A) True
- B) False

Question

Buying a single company's stock usually provides...

- A) ... a safer return than a stock mutual fund
- B) ... the same return of a single bond
- C) ... more risk than a mutual fund
- D) ... a tax-shield benefit





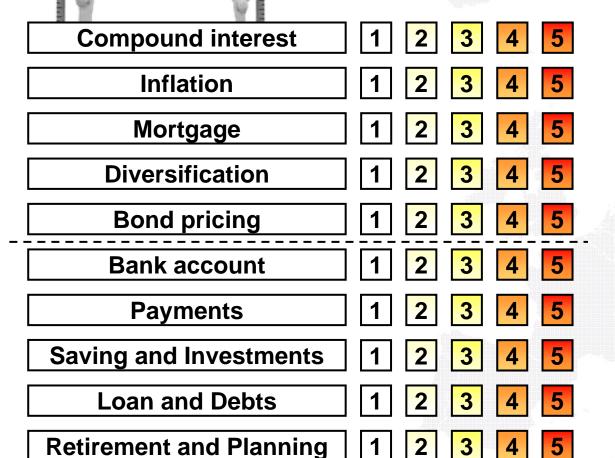








How much people in Europe know about finance?

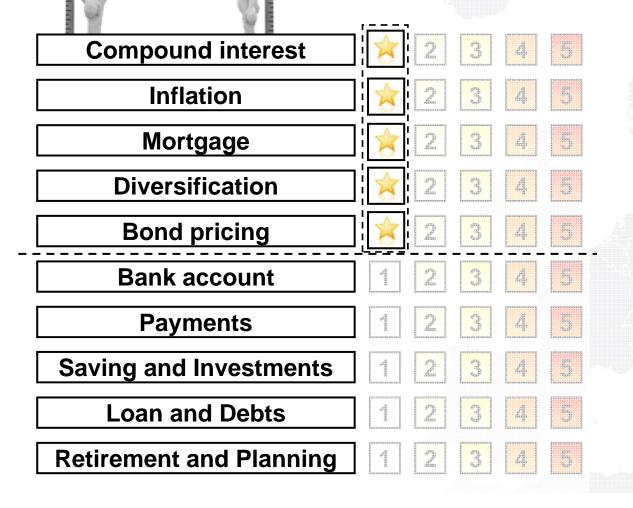


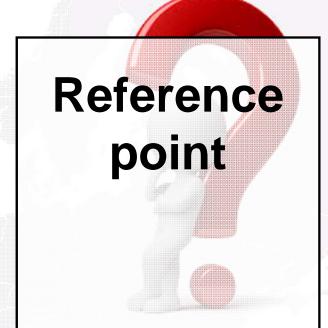
Standard approach

- # of questions for each topic
- # options for each question
- "Do not know" option
- "Prefer not to say" option
- Growing difficulty



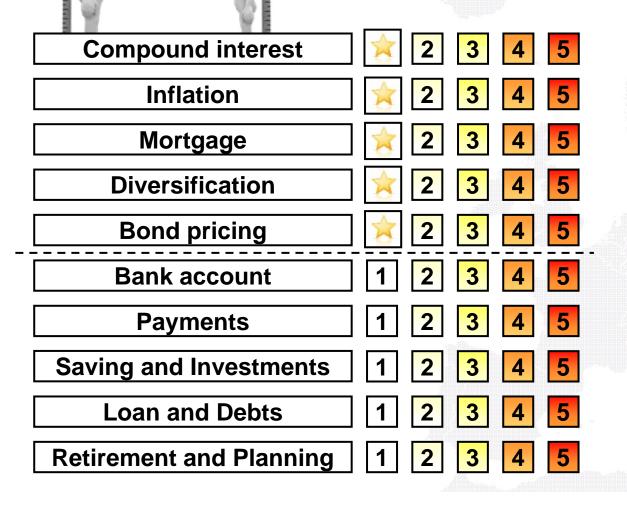


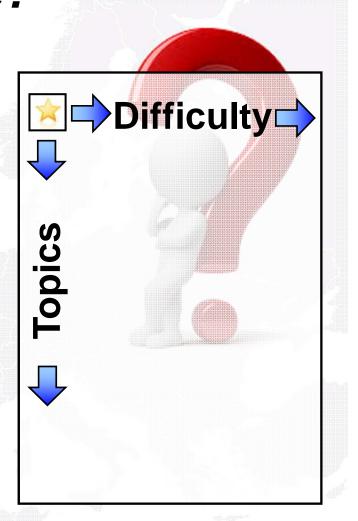






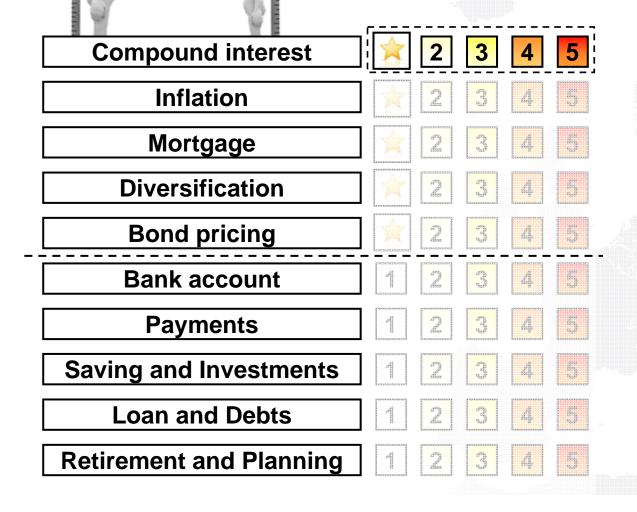


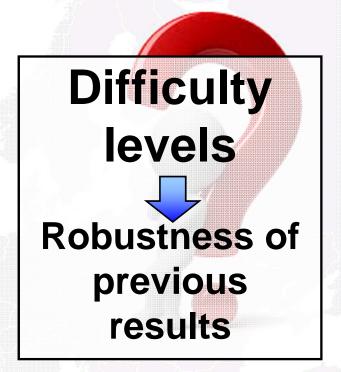






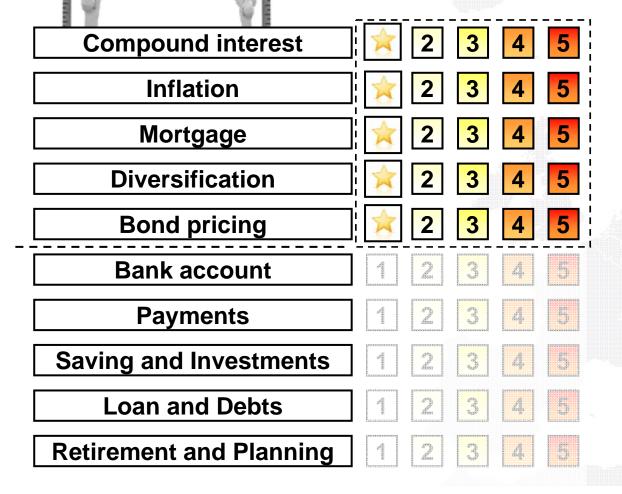


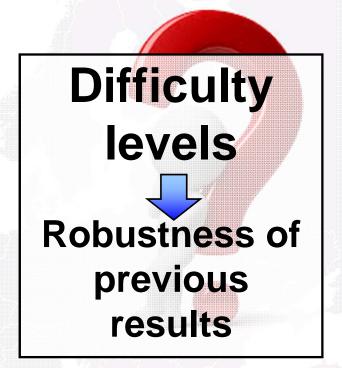






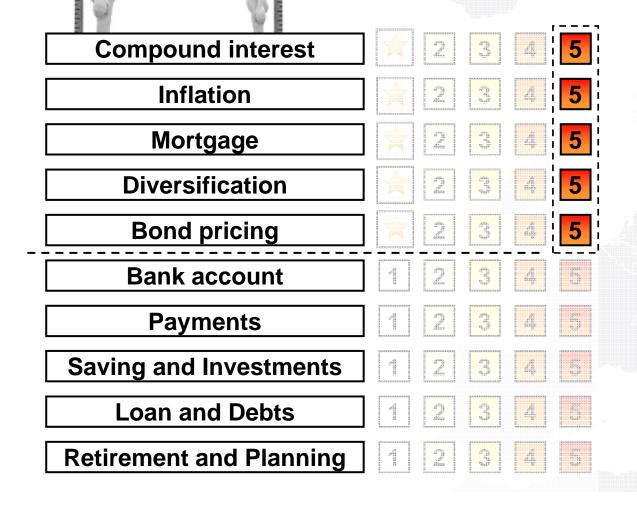


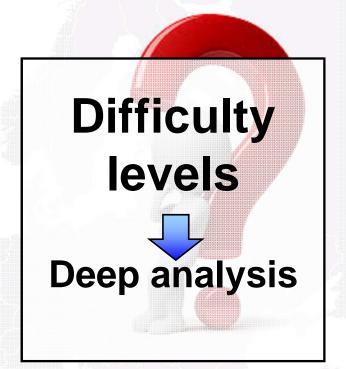






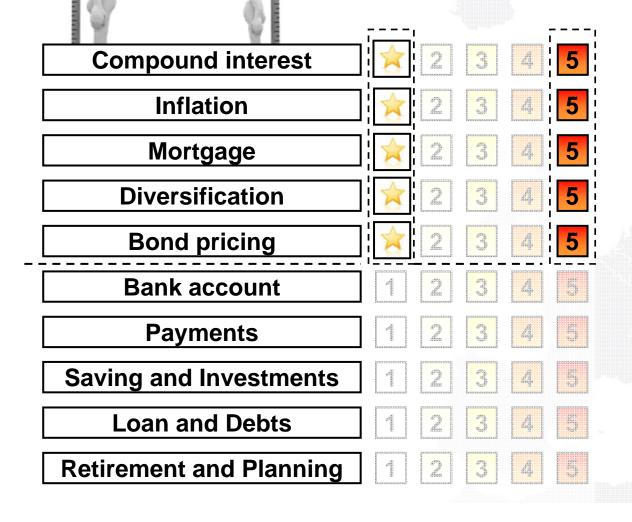


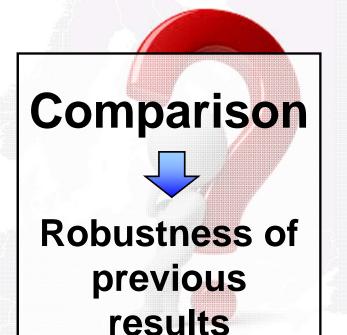








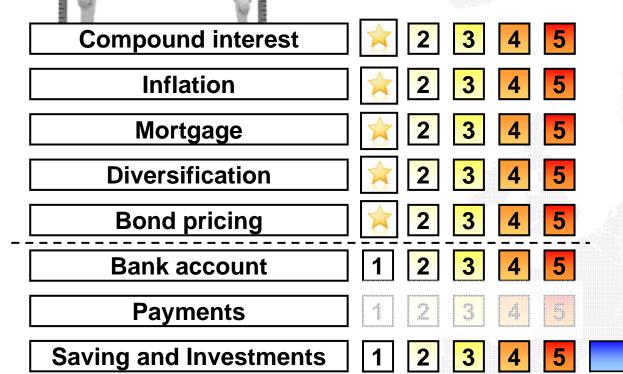








How much people in Europe know about finance?



Loan and Debts

Retirement and Planning

Relevance of the topic

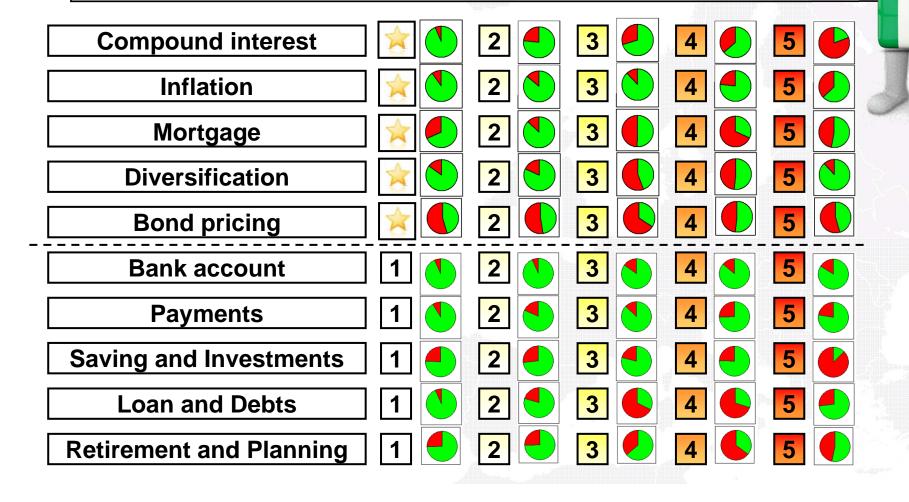
AUTORITÉ DES MARCHÉS FINANCIERS

AMF Financial literacy in European countries



How much people in Europe know about finance?

The case of Italy



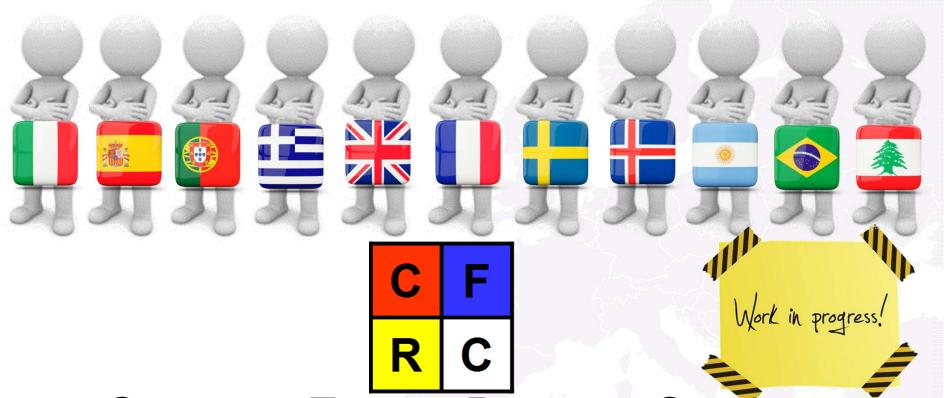


Financial literacy in European countries How much people in Europe know



about finance?

The network



Consumer Finance Research Center

(www.consumer-finance.org)





How much people in Europe know

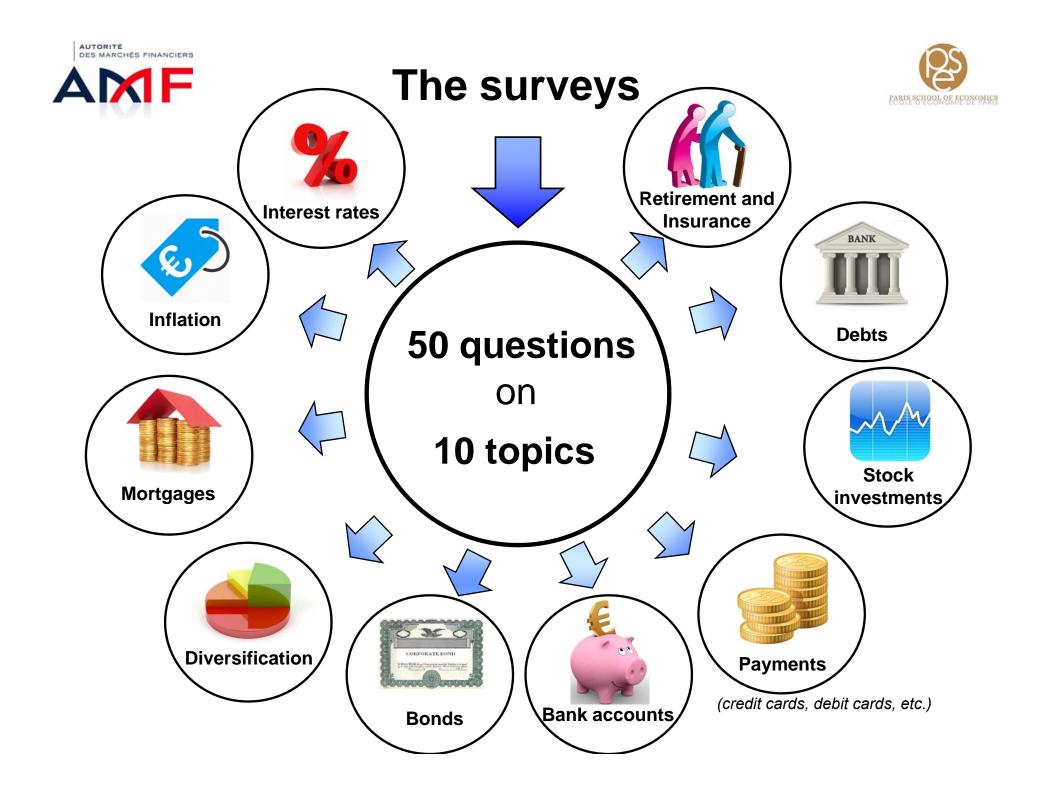
about finance?

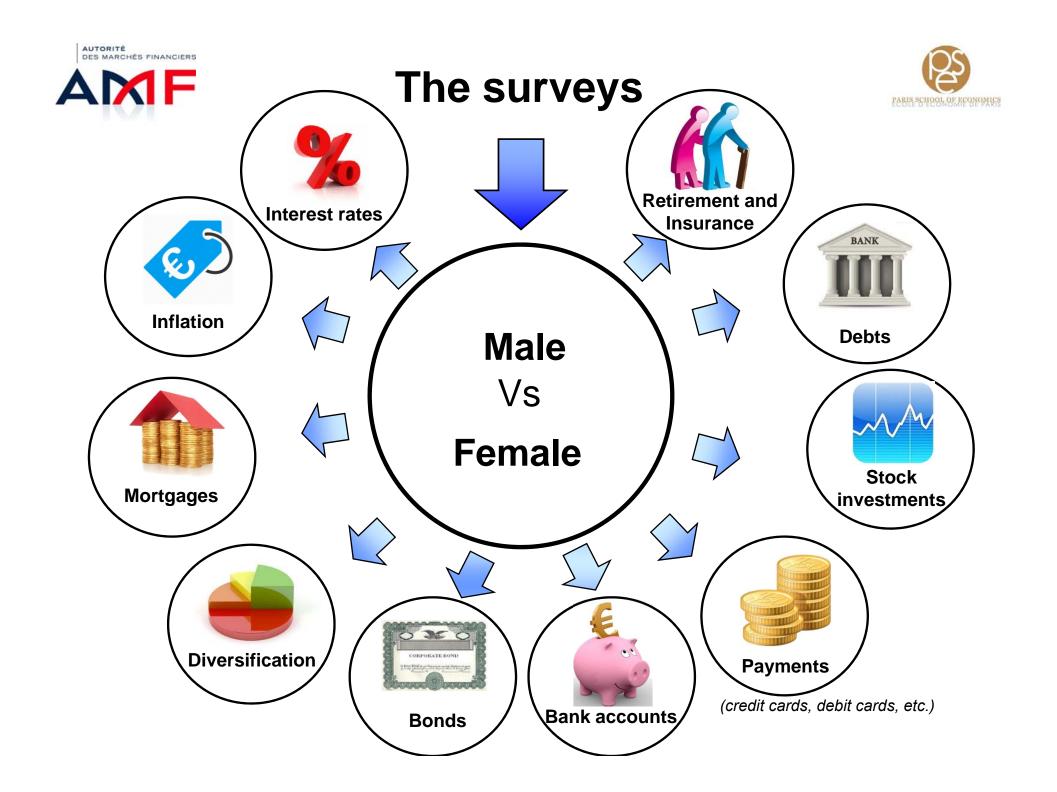
The network

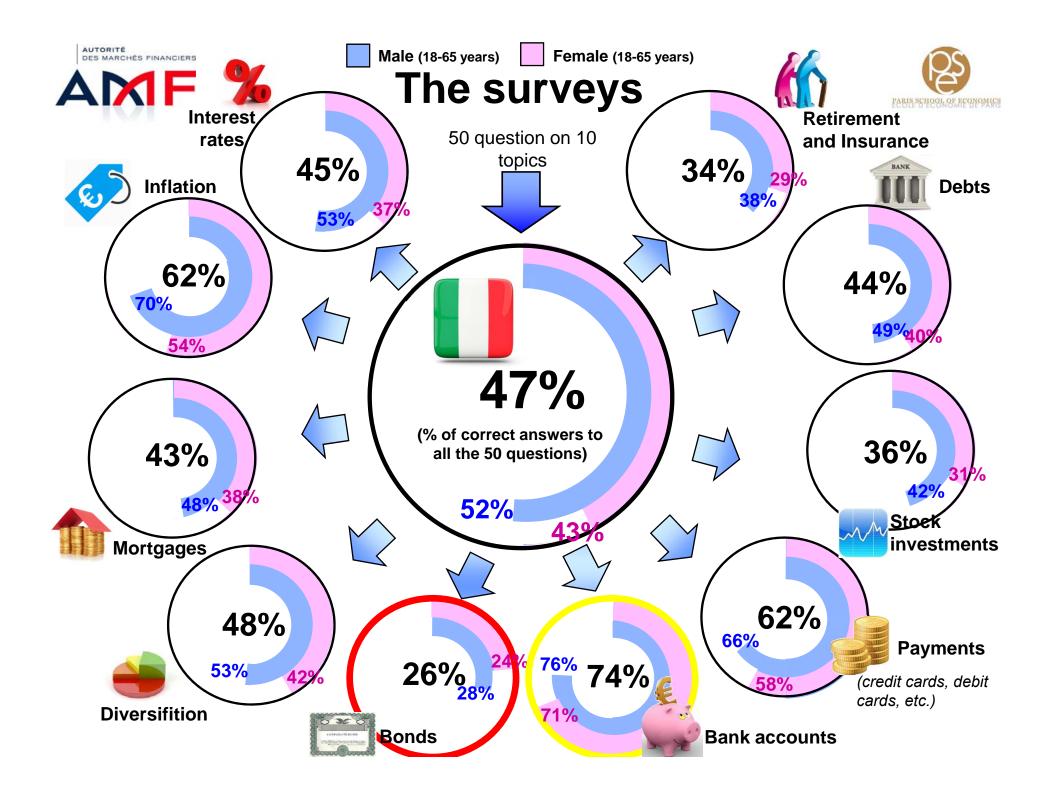


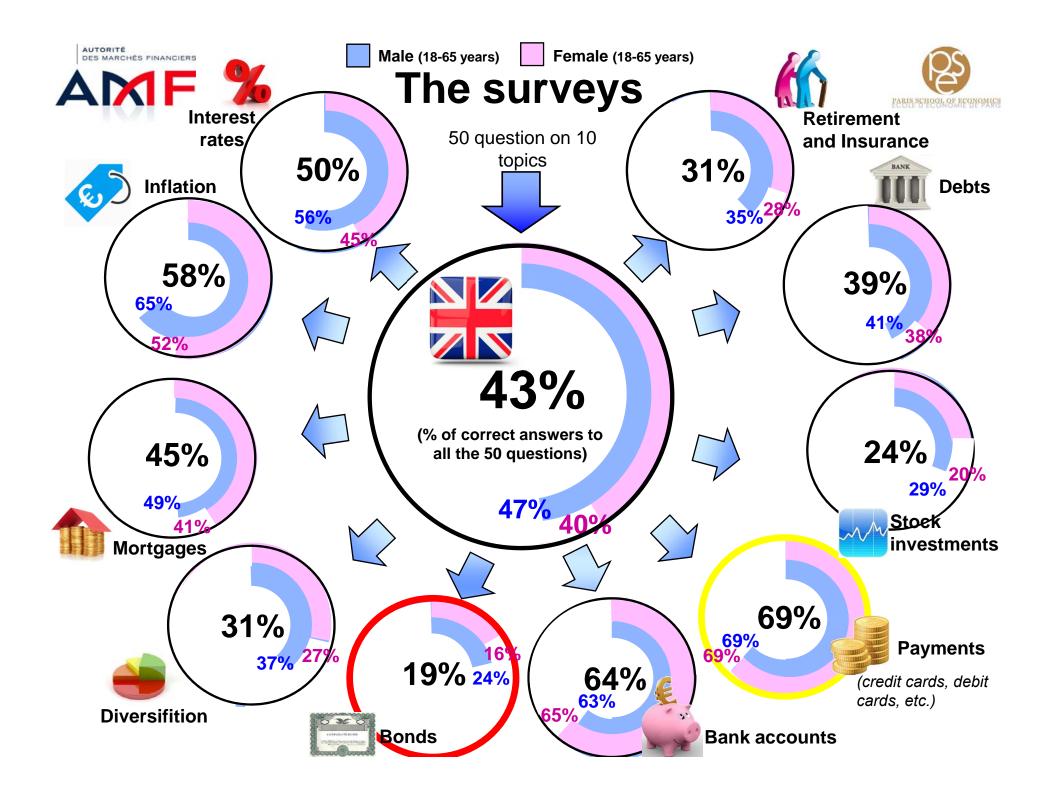
Consumer Finance Research Center

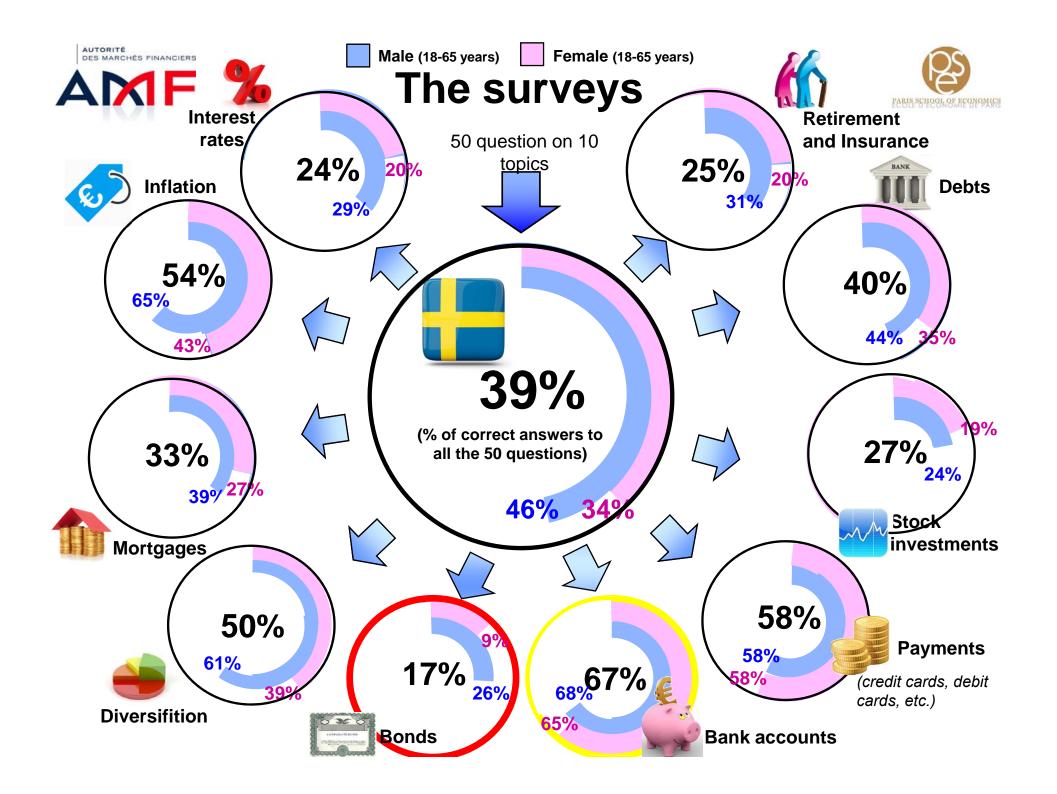
(www.consumer-finance.org)

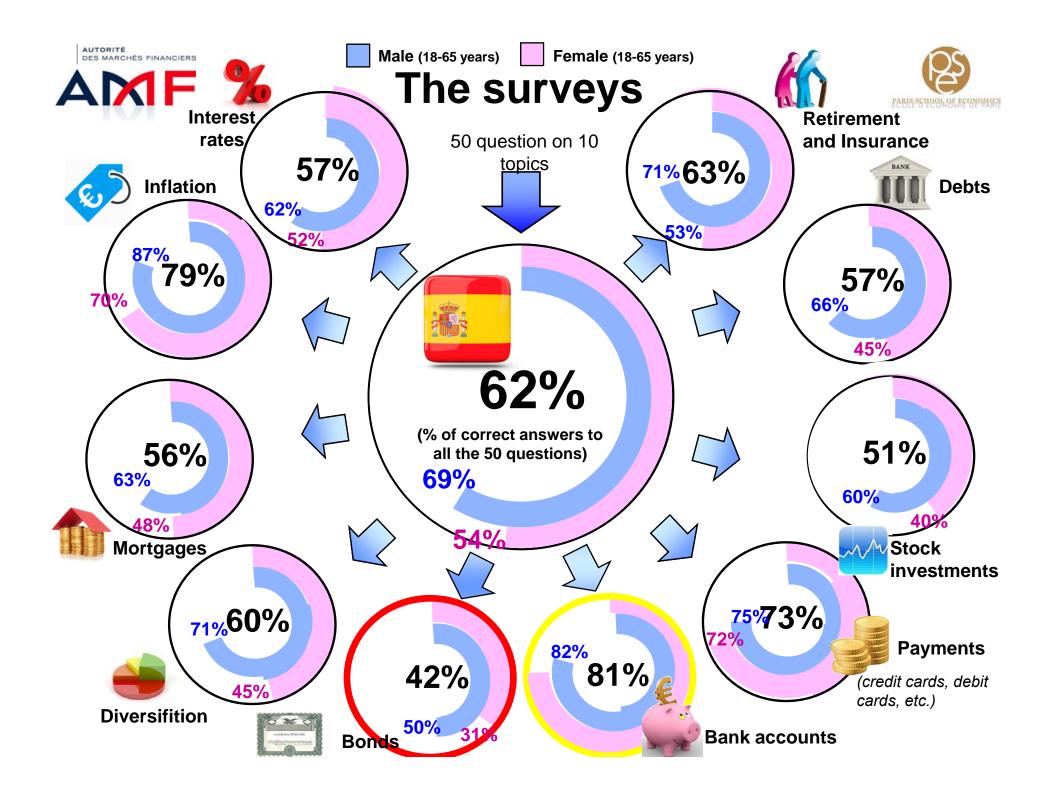


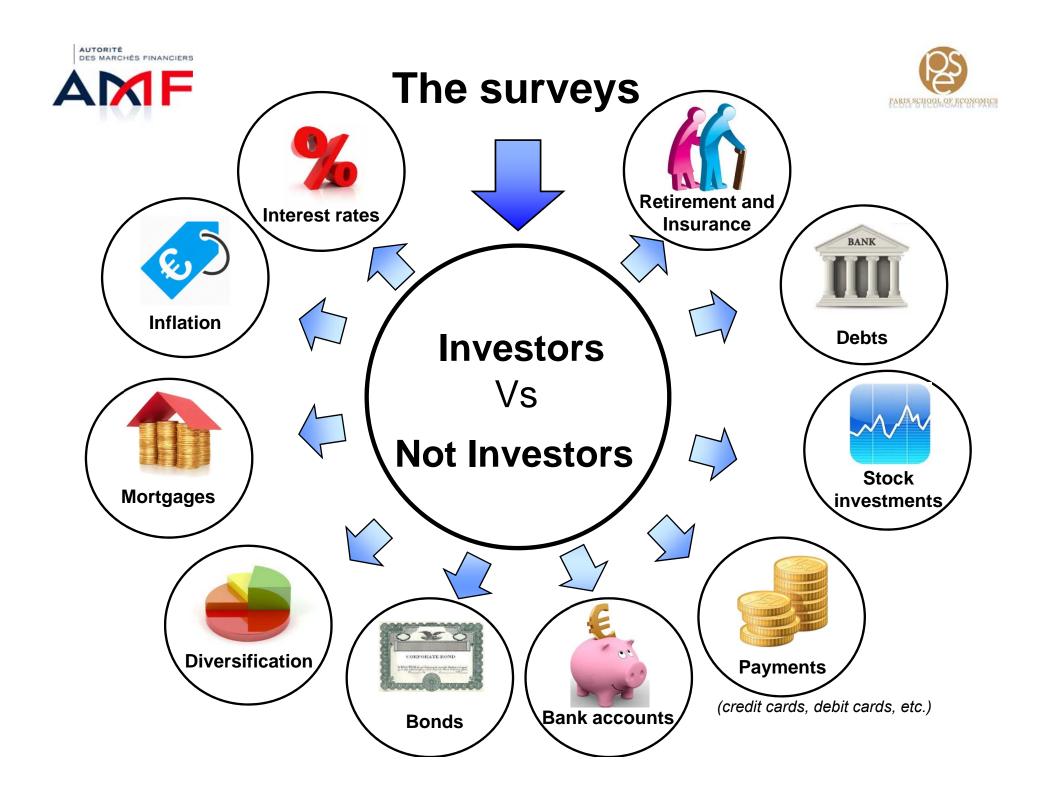


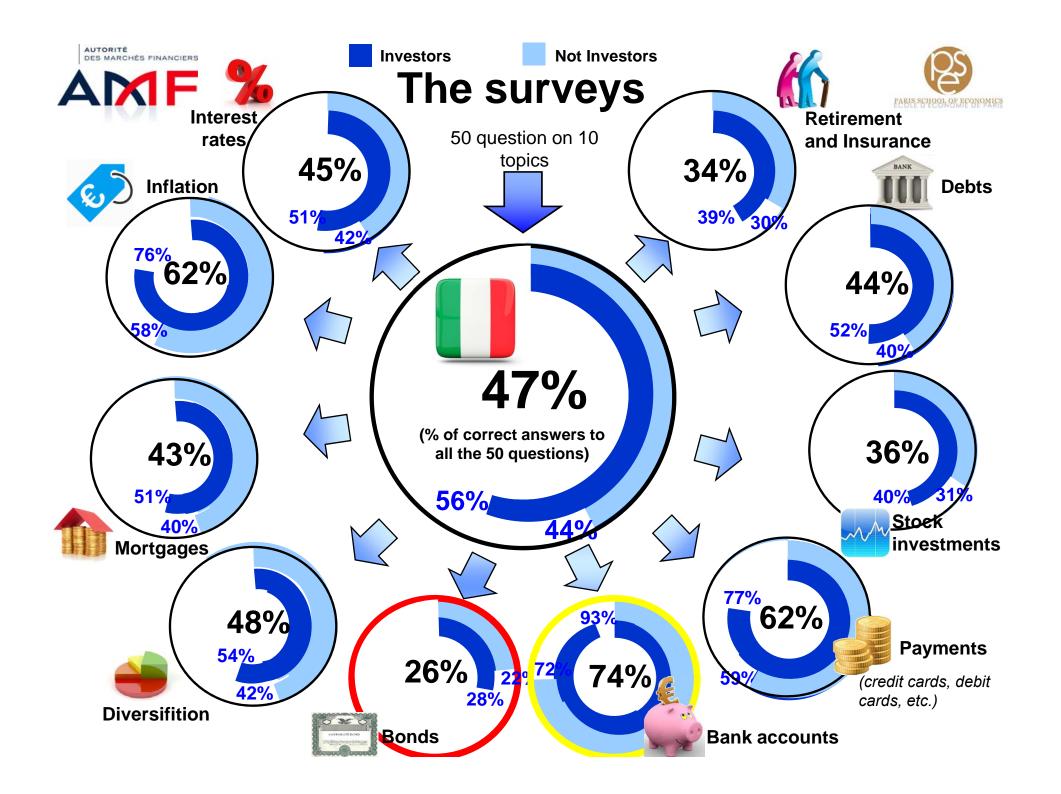


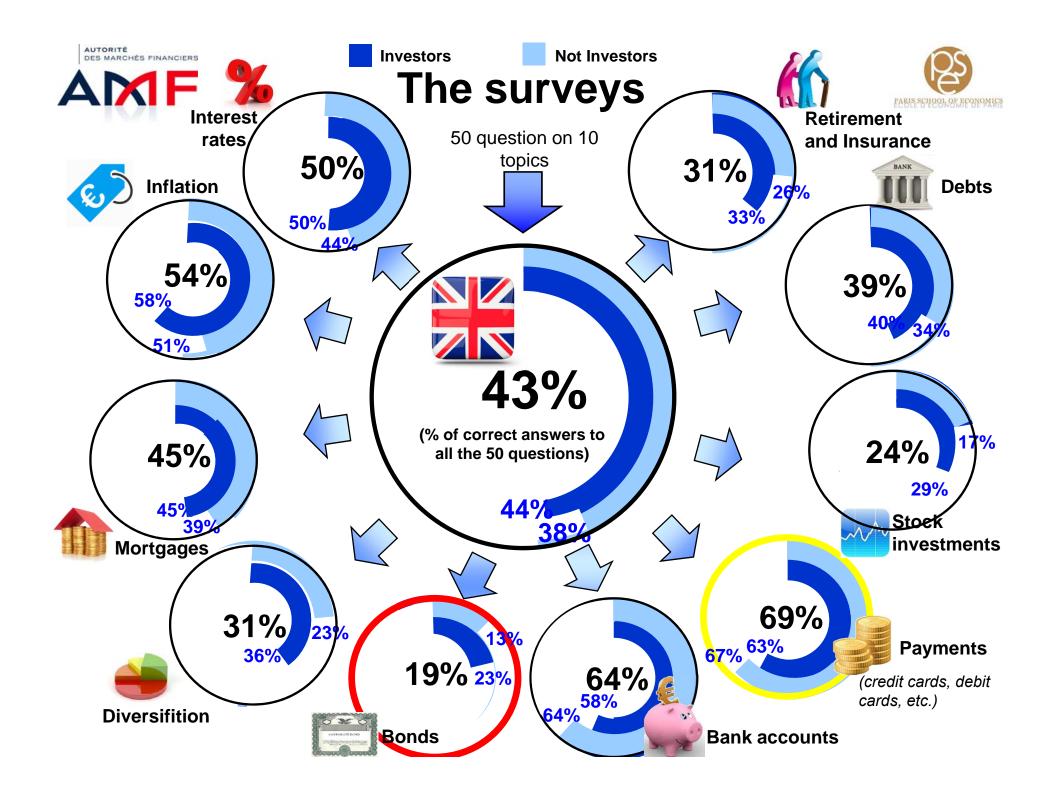


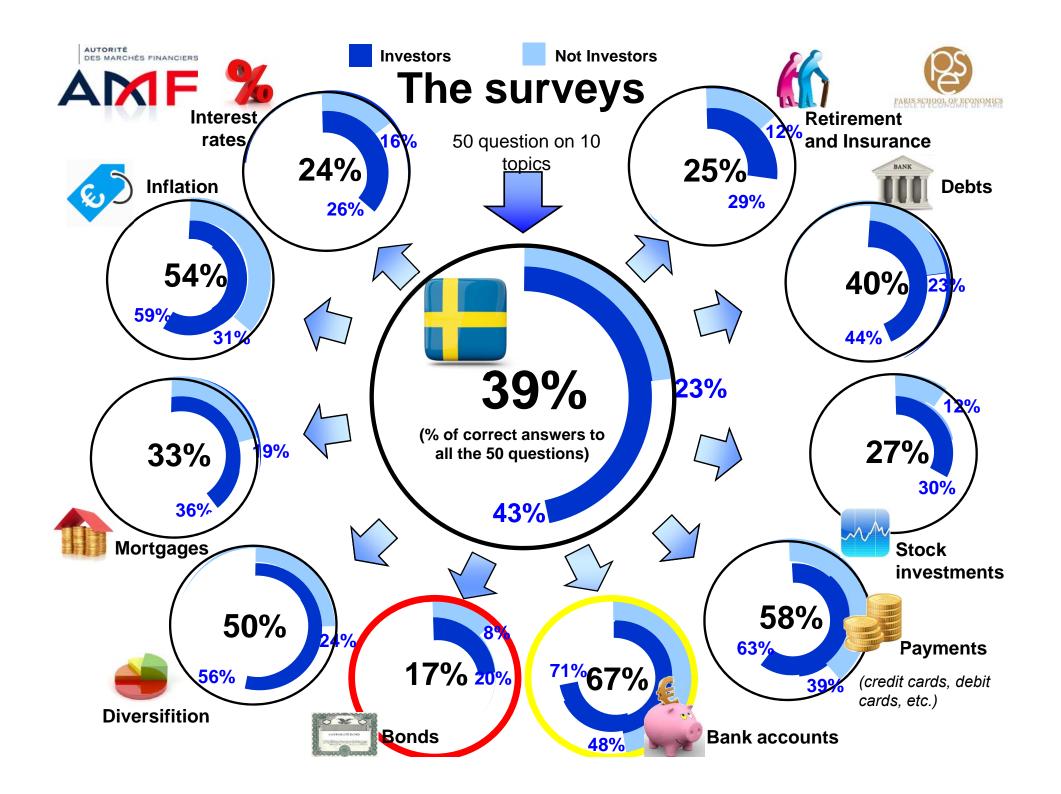


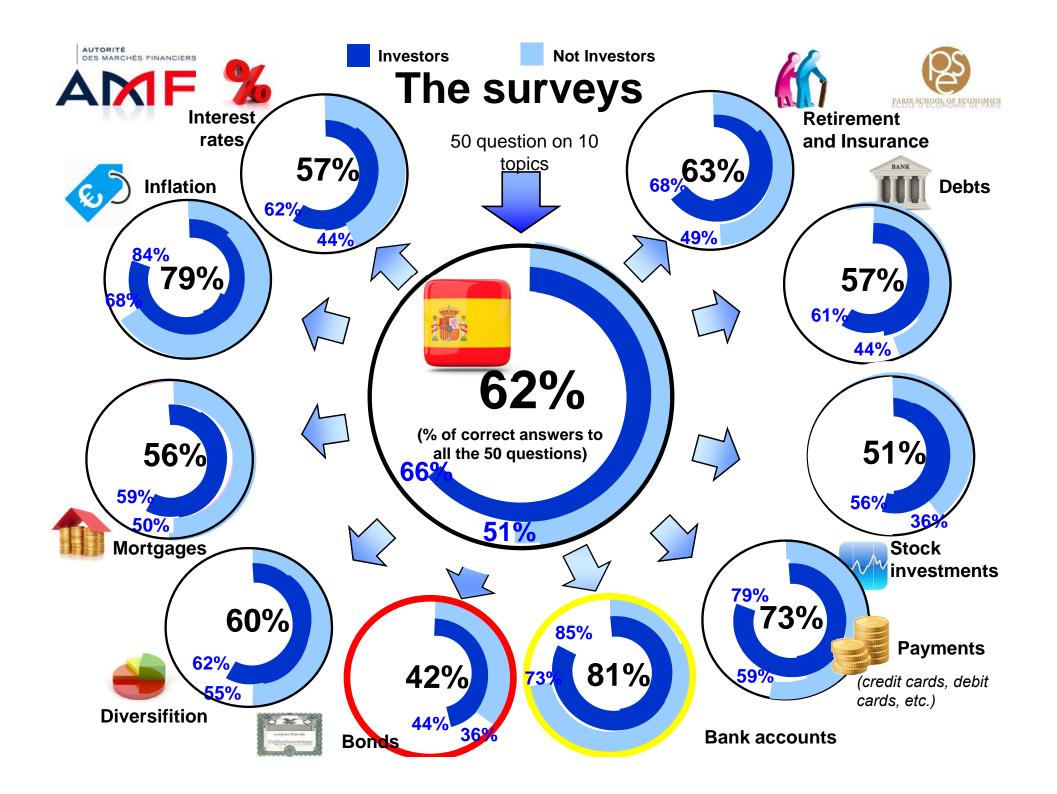


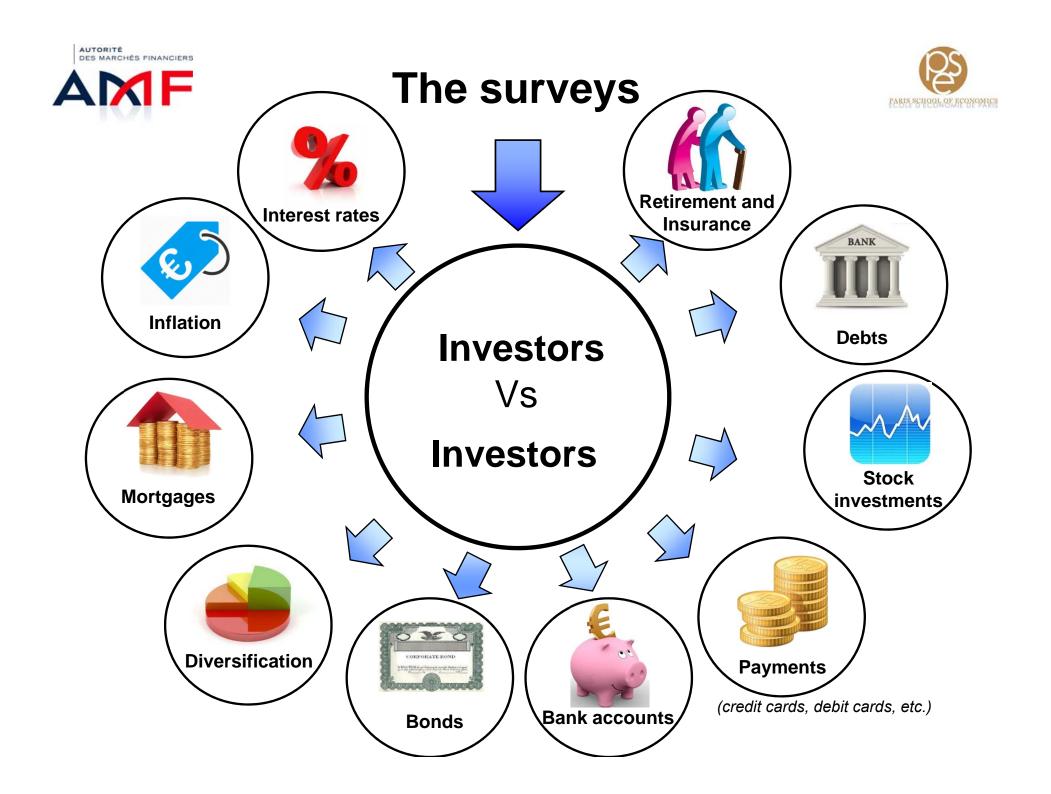














Investment knowledge scores Total score (50 questions on 10 topics)



All Investors	Bond Investors	Stock Investors	Mutual Fund Investors
56%	49%	50%	59%
44%	42%	49%	57%
43%	34%	39%	34%
66%	88%	69%	80%



Investment knowledge scores



	All in	vestors	Bond ir	nvestors	Stock I	nvestors		al Fund estors
Total (50)	56%		49%		50%		59%	
Diversification (5)	54%		52%		54%		64%	
Bond (5)	28%	41%	32%	42%	37%	44%	34%	49%
Stock (5)	40%		43%		41%		50%	
Total (50)	4	4%	42	2%	4	9%	5	57%
Diversification (5)	31%		35%		34%		59%	
Bond (5)	19%	25%	33%	33%	27%	31%	42%	46%
Stock (5)	24%		31%		32%		37%	
Total (50)	1 1	3%	1 2/	1%	1 2	9%		34%
Diversification (5)	50%	370	53%	+70	71%	970	70%	9470
Bond (5)	17%	31%	24%	44%	42%	59%	22%	53%
Stock (5)	27%		55%		64%		68%	
-		<u>'</u>		<u> </u>				
Total (50)	6	6%	88	3%	6	9%	8	80%
Diversification (5)	60%		100%		76%		76%	
Bond (5)	42%	51%	100%	93%	59%	63%	64%	72 %
Stock (5)	51%		80%		53%		76%	



Financial literacy and financial behaviors in European countries



GROUPS		Financial literacy	RISK	Financial Behaviors				
Countries	Groups	TOTAL (50 questions)	Risk attitude (1=Low 7=High)	Use of e-banking (Yes=1 No=0)	Figure out retirement needs? (Yes=1 No=0)	Cash preference (in case of a purchase between 100€ and 200€)		
	Not Investors	44%						
TA	Investors-Bonds	49%						
TA	Investors-Stocks	50%						
TA	Investors-Mutual funds	59%						
			•					
1	Not Investors	38%						
JK	Investors-Bonds	42%						
UK	Investors-Stocks	49%						
JK	Investors-Mutual funds	57%						
	Not Investors	23%						
SWE	Investors-Bonds	34%						
SWE	Investors-Stocks	39%						
SWE	Investors-Mutual funds	34%						
			•					
	Not Investors	51%						
SPA	Investors-Bonds	88%						
SPA	Investors-Stocks	69%						
SPA	Investors-Mutual funds	80%						

Financial literacy and financial behaviors in European countries

Financial Behaviors

Figure out retirement

needs?

(Yes=1 No=0)

Cash preference

(in case of a purchase

between 100€ and 200€)

	GROUPS	Financial literacy	RIJSK	Final
Countries	Groups	TOTAL (50 questions)	Risk attitude (1=Low 7=High)	Use of e-banking (Yes=1 No=0)
	Not Investors	44%	2,93	
ITA	Investors-Bonds	49%	3,70	
ITA	Investors-Stocks	50%	4,65	
ITA	Investors-Mutual funds	59%	4,14	
	_		•	-
1	Not Investors	38%	2,78	
UK	Investors-Bonds	42%	4,50	
UK	Investors-Stocks	49%	4,42	
UK	Investors-Mutual funds	57%	4,67	
			-	•
	Not Investors	23%	2,76	
SWE	Investors-Bonds	34%	2,94	
SWE	Investors-Stocks	39%	4,81	
SWE	Investors-Mutual funds	34%	3,90	
elas ·				_
	Not Investors	51%	3,43	
SPA	Investors-Bonds	88%	6,00	
SPA	Investors-Stocks	69%	4,47	
SPA	Investors-Mutual funds	80%	4,00	

AUTORITÉ DES MARCHÉS FINANCIERS

AUTORITÉ Financial literacy and financial behaviors in European countries DES MARCHÉS FINANCIERS RISK **Financial** Financial Behaviors literacy Figure out retirement **TOTAL** Risk attitude Use of e-banking **Countries Groups** (50 questions) 7=High) (1=Low (Yes=1 No=0) **Not Investors** 44% 53,7% Investors-Bonds 49% 65,2% ITA 50% 91,9% Investors-Stocks ITA Investors-Mutual ITA 59% 86,9% funds 38% 78,6% Not Investors 42% 87,8% UK Investors-Bonds 49% 89,9% UK Investors-Stocks Investors-Mutual UK 57% 76,9% funds Not Investors 23% 74,8% 34% 58,8% **SWE** Investors-Bonds **SWE** Investors-Stocks 39% 94,1% Investors-Mutual **SWE** 34% 97,1% funds **Not Investors** 51% 68,6% 88% 100,0% SPA Investors-Bonds

69%

80%

SPA

SPA

Investors-Stocks

Investors-Mutual

funds

Cash preference

(in case of a purchase

between 100€ and 200€)

needs?

(Yes=1 No=0)

86,7%

100,0%

Financial literacy and financial behaviors in European countries

AN						
	GROUPS	Financial literacy	RISK	Fina	ncial Behaviors	TEORNOR RECOR
Countries	Groups	TOTAL (50 questions)	Risk attitude (1=Low 7=High)	Use of e-banking (Yes=1 No=0)	Figure out retirement needs? (Yes=1 No=0)	Cash preference (in case of a purchase between 100€ and 200€)
	Not Investors	44%			13,0%	
ITA	Investors-Bonds	49%			28,3%	
ITA	Investors-Stocks	50%			45,9%	
ITA	Investors-Mutual funds	59%			21,3%	
			_			
1 🔽	Not Investors	38%		·	12,4%	
UK	Investors-Bonds	42%			53,1%	
UK	Investors-Stocks	49%			50,7%	
UK	Investors-Mutual funds	57%		·	48,7%	
			_	•		•
	Not Investors	23%]		7,6%	
SWE	Investors-Bonds	34%			17,6%	
SWE	Investors-Stocks	39%]		39,2%	
SWE	Investors-Mutual funds	34%			29,8%	
dia Control			_			
	Not Investors	51%			14,3%	
SPA	Investors-Bonds	88%			100,0%	
SPA	Investors-Stocks	69%			40,0%	
SPA	Investors-Mutual funds	80%			40,0%	

AUTORITÉ Financial literacy and financial behaviors in European countries DES MARCHÉS FINANCIERS RISK **Financial** Financial Behaviors GROUPS literacy Figure out retirement Cash preference **TOTAL** Risk attitude Use of e-banking **Countries Groups** needs? (in case of a purchase (50 questions) 7=High) (Yes=1 No=0) (1=Low (Yes=1 No=0) between 100€ and 200€) **Not Investors** 44% 23,9% Investors-Bonds 49% 23,9% ITA 50% 18,9% Investors-Stocks ITA Investors-Mutual ITA 59% 18,0% funds 38% 12,2% Not Investors 42% 10,2% UK Investors-Bonds 49% 11,6% UK Investors-Stocks Investors-Mutual UK 57% 5,1% funds Not Investors 23% 5,9% 34% 5,9% **SWE** Investors-Bonds **SWE** Investors-Stocks 39% 7,8% Investors-Mutual **SWE** 34% 2,9% funds Not Investors 51% 28,6% 88% 50,0% SPA Investors-Bonds **SPA** Investors-Stocks 69% 20,0%

0,0%

Investors-Mutual

funds

SPA

80%

Financial literacy and financial behaviors in European countries AUTORITÉ DES MARCHÉS FINANCIERS **Financial** Financial Behaviors literacy Figure out retirement Cash preference **TOTAL** Risk attitude Use of e-banking **Countries Groups** needs? (in case of a purchase (50 questions) (1=Low 7=High) (Yes=1 No=0) between 100€ and 200€) (Yes=1 No=0) 2,93 53,7% 13,0% 23,9% Not Investors 44% **Investors-Bonds** 49% 3,70 65,2% 28,3% 23,9% ΙΤΑ 50% 4,65 91,9% 45,9% 18,9% ITA Investors-Stocks Investors-Mutual ITA 59% 4,14 86,9% 21,3% 18,0% funds

	Not Investors	38%	2,78	78,6%	12,4%	12,2%
UK	Investors-Bonds	42%	4,50	87,8%	53,1%	10,2%
UK	Investors-Stocks	49%	4,42	89,9%	50,7%	11,6%
UK	Investors-Mutual funds	57%	4,67	76,9%	48,7%	5,1%
	-	-	-		=	-

	Not Investors	23%	2,76	74,8%	7,6%	5,9%
SWE	Investors-Bonds	34%	2,94	58,8%	17,6%	5,9%
SWE	Investors-Stocks	39%	4,81	94,1%	39,2%	7,8%
SWE	Investors-Mutual funds	34%	3,90	97,1%	29,8%	2,9%

who						
1601	Not Investors	51%	3,43	68,6%	14,3%	28,6%
SPA	Investors-Bonds	88%	6,00	100,0%	100,0%	50,0%
SPA	Investors-Stocks	69%	4,47	86,7%	40,0%	20,0%
SPA	Investors-Mutual funds	80%	4,00	100,0%	40,0%	0,0%



Financial Literacy in Europe



Conclusions

- 1 Financia literacy is low on average...
- ... but changes a lot when different areas of knowledge are taken into account.
- Investors are on average more knowledgable than others.
- There are differences between investors (bond, stock, mutual fund investors).
- Financial literacy seems to be related with financial behaviors.





AMF Scientific Advisory Board Conference

Financial education in the digital age: What are the challenges for investment?

Paris, Maison du Barreau – Monday, June 20th 2016

Financial Literacy in Europe

(Gianni Nicolini¹)

For more details on the research project visit the



Consumer Finance Research Center (www.consumer-finance.org)



¹Associate professor of Finance University of Rome "Tor Vergata" (Rome, Italy) - Faculty of Economics mail: gianni.nicolini@uniroma2.it