

CONSOB – Commissione Nazionale per le Società e la Borsa

Roma, Giovedì 2 Marzo 2017

Metodi di rilevazione delle competenze finanziarie

(Gianni Nicolini¹)

Agenda

- 1** Financial literacy and Financial behaviors
- 2** The assessment of financial literacy
- 3** Financial literacy in European countries
- 4** How to measure financial literacy?

Financial literacy and Financial behaviors

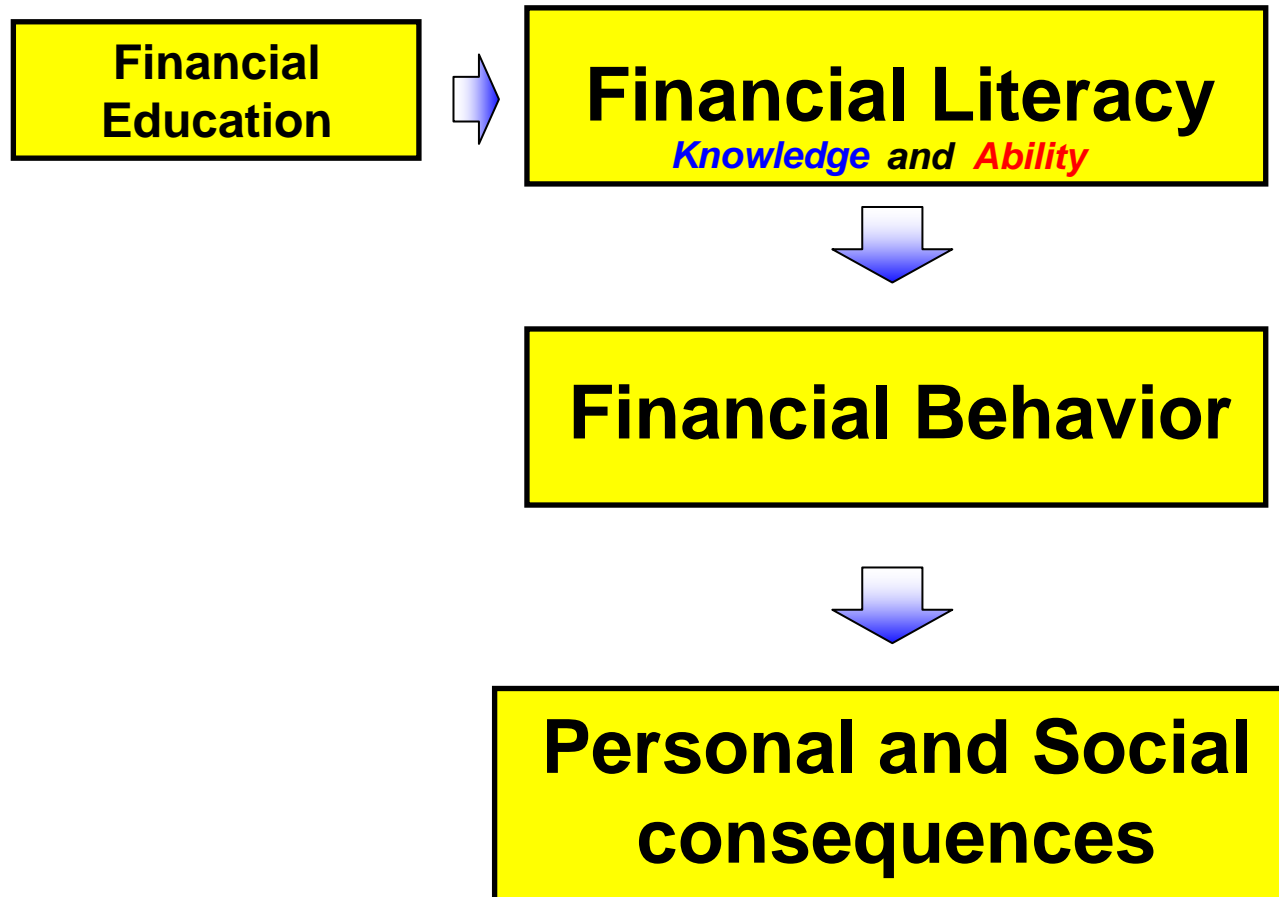
Financial Literacy

Financial literacy and Financial behaviors

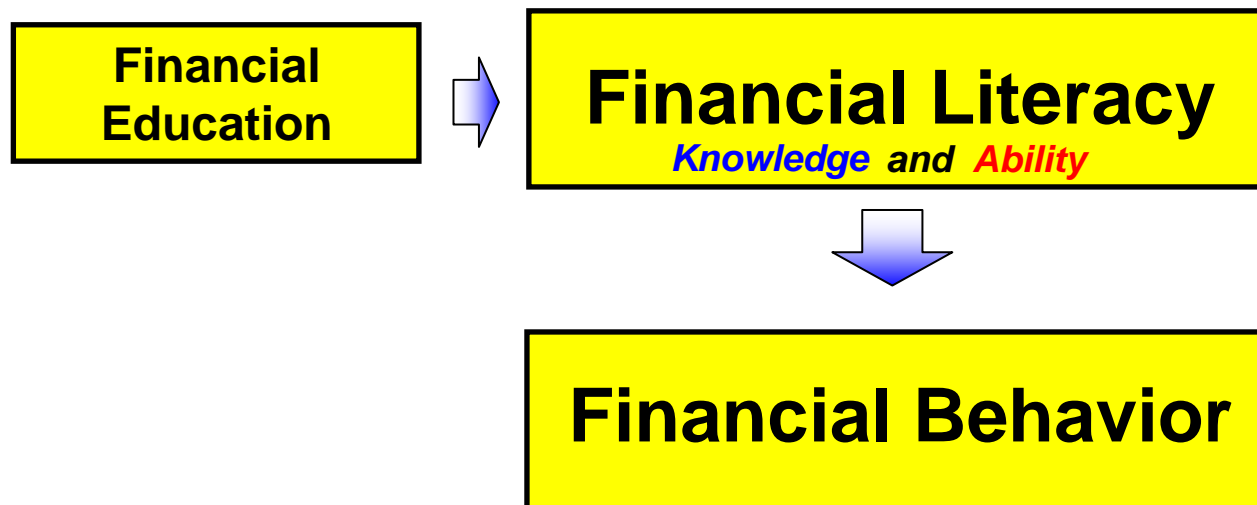
Financial Literacy *Knowledge and Ability*

- | | | | |
|------|---|------|---|
| 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 appropriate, short-term decision-making and sound, long-range financial planning, while mindful of life events and changing economic conditions” (Remund 2010) |
| 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) | | |

Financial literacy and Financial behaviors



Financial literacy and Financial behaviors



The assessment of financial literacy

***“How do we measure
Financial Literacy?”***



The assessment of financial literacy

***“How do we measure
Financial Literacy?”***



General issues

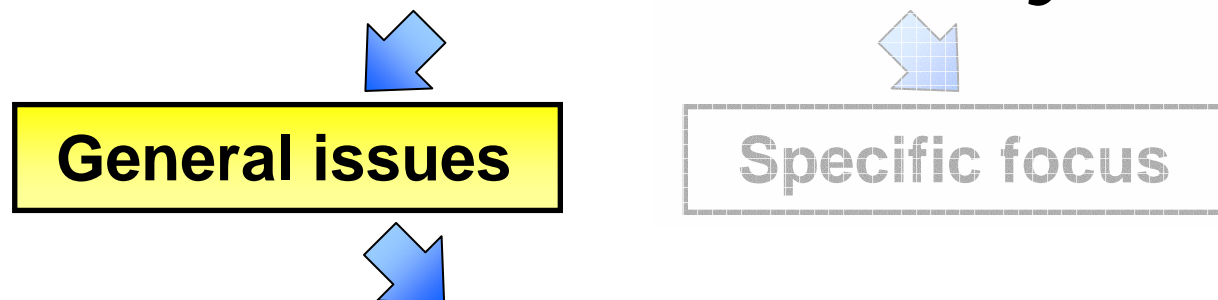


Specific focus



The assessment of financial literacy

“How do we measure Financial Literacy?”



Hypothesis

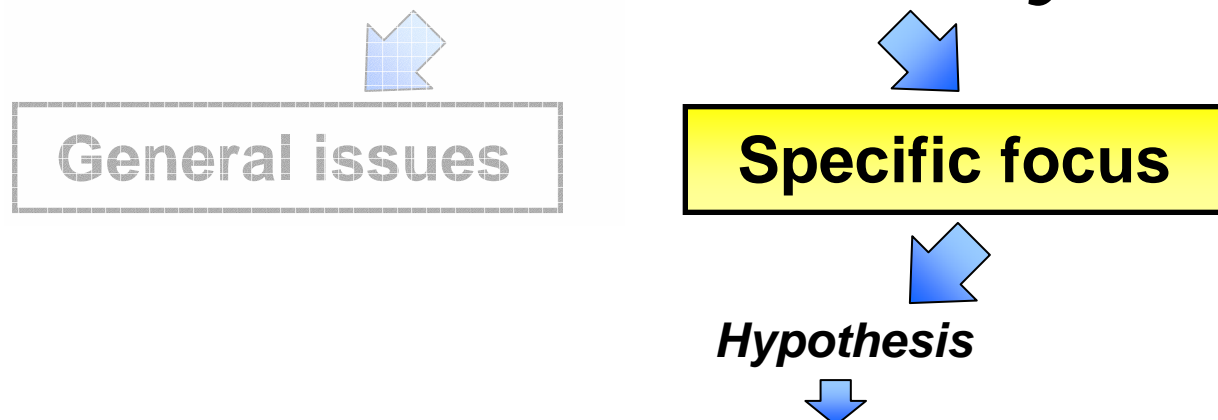
A wide range of topics such as budgeting, saving, borrowing, investing, etc. must be analysed because all are relevant for consumers.

(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)



The assessment of financial literacy

“How do we measure Financial Literacy?”



“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

(Volpe, Chen and Pavlicko 1996) (Lusardi and Tufano 2009)
(Muller and Weber 2008)

Credit

Debt

(Jones 2005)

Stock Market

(NASD 2003)

The assessment of financial literacy

Financial Literacy

Knowledge and Ability



**Compound
interest**



Inflation



Bond pricing



Mortgage



Diversification

Compound interest

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

The assessment of financial literacy

Financial Literacy

Knowledge and Ability




 Compound
 interest


 Inflation


 Bond pricing
Inflation


 Mortgage


 Diversification

Question	Options
Imagine that the interest rate on your 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)
	<i>Don't know</i>
	<i>Prefer not to say</i>

The assessment of financial literacy

Financial Literacy

Knowledge and Ability




 Compound
 interest


 Inflation


 Bond pricing


 Mortgage


 Diversification

Bond pricing

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

The assessment of financial literacy

Financial Literacy

Knowledge and Ability



Compound
interest



Inflation



Bond pricing



Mortgage



Diversification

Mortgage

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

The assessment of financial literacy

Financial Literacy

Knowledge and Ability



Compound
interest



Inflation



Bond pricing



Mortgage



Diversification

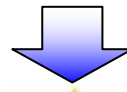
Diversification

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

The assessment of financial literacy

Financial Literacy

Knowledge and Ability



**Compound
interest**



Inflation



Bond pricing



Mortgage



Diversification

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)

The assessment of financial literacy

Financial Literacy

Knowledge and Ability

$$\sum \left(\begin{array}{c} \star \\ 0 \end{array} \begin{array}{c} 1 \\ 0 \end{array} \right) + \left(\begin{array}{c} \star \\ 0 \end{array} \begin{array}{c} 1 \\ 0 \end{array} \right) + \left(\begin{array}{c} \star \\ 0 \end{array} \begin{array}{c} 1 \\ 0 \end{array} \right) + \left(\begin{array}{c} \star \\ 0 \end{array} \begin{array}{c} 1 \\ 0 \end{array} \right) + \left(\begin{array}{c} \star \\ 0 \end{array} \begin{array}{c} 1 \\ 0 \end{array} \right)$$

(correct answer = 1)
(... zero otherwise) (correct answer = 1)
(... zero otherwise) (correct answer = 1)
(... zero otherwise) (correct answer = 1)
(... zero otherwise) (correct answer = 1)
(... zero otherwise)

=

Financial Knowledge Index ...as sum of correct answers

Range [0;5]

Moore (2003)

Sabri *et al.* (2008)

Robb & Sharpe (2009)

Gerardi, Goette, & Meier (2010)

Agnew & Szkyman (2005)

The assessment of financial literacy

Financial Literacy

Knowledge and Ability



Are all the answers rights? Yes =1, No = 0

Dummy var [0;1]

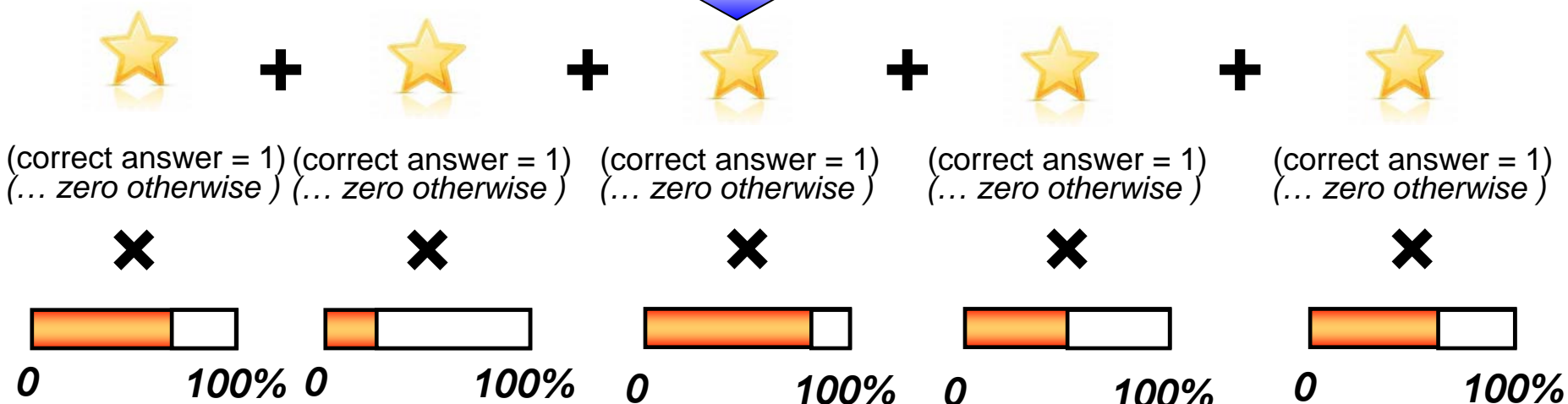
Almenberg and Säve-Söderberg (2011)

Lusardi and Mitchell (2011)

The assessment of financial literacy

Financial Literacy

Knowledge and Ability



=

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

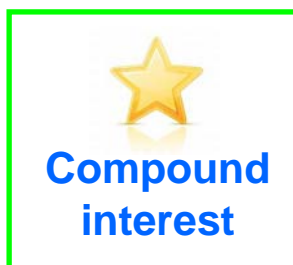
Financial literacy in European countries

***How much people
in Europe know
about finance?***

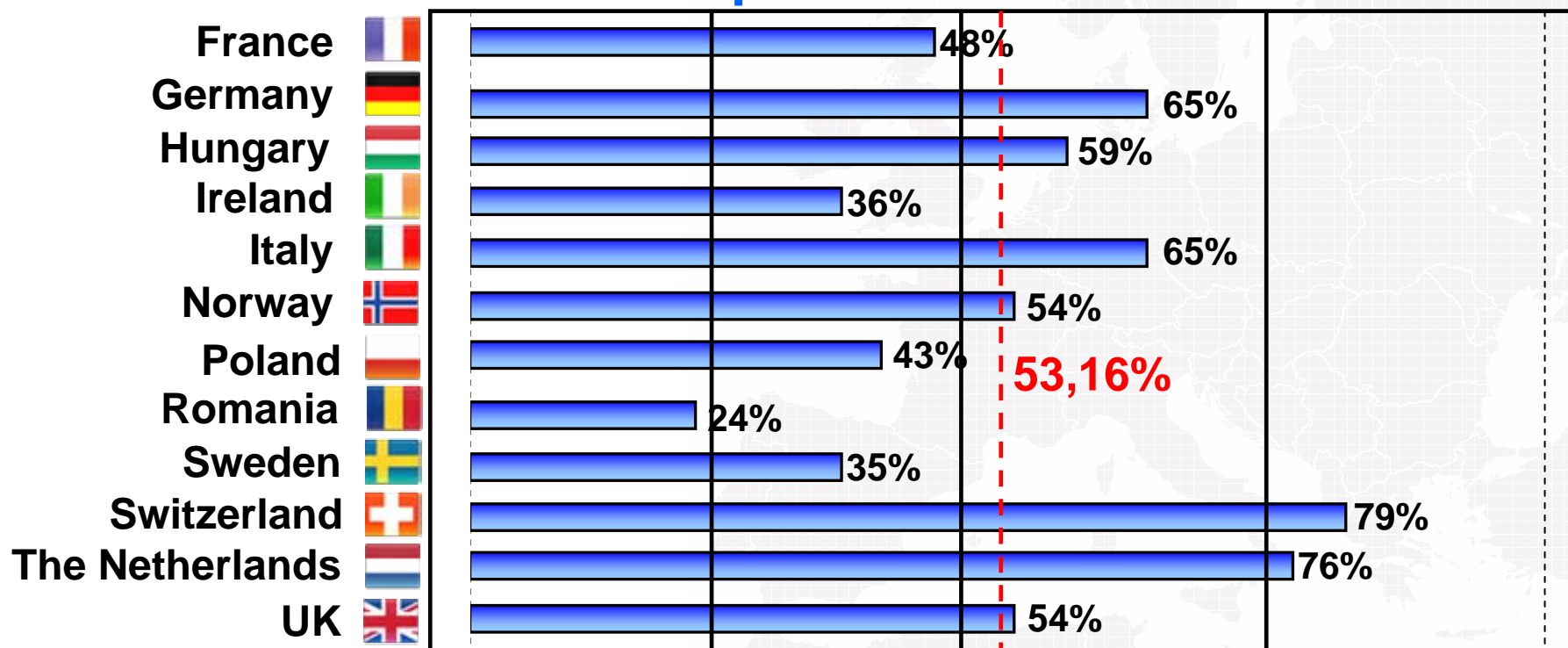


Financial literacy in European countries

How much people in Europe know about finance?

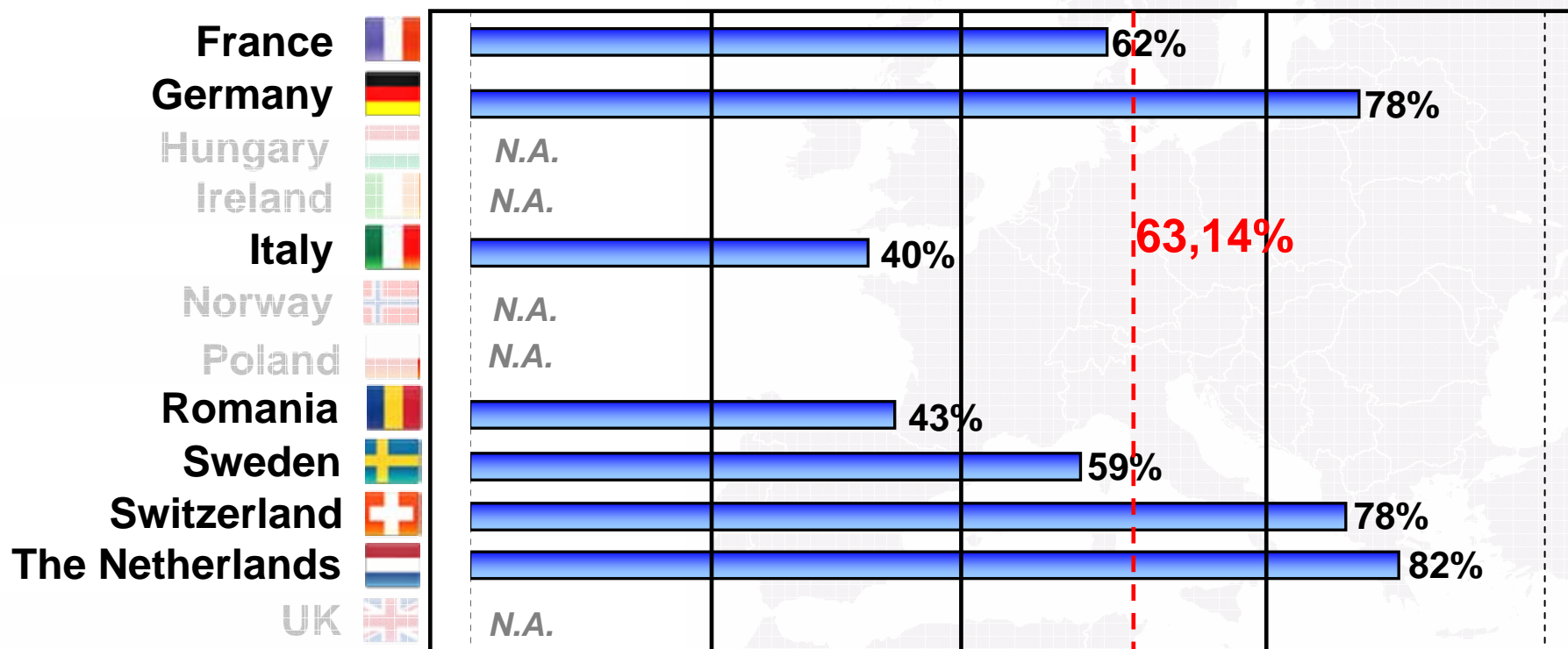


Compound interest



Financial literacy in European countries

How much people in Europe know about finance?



Financial literacy in European countries

How much people in Europe know about finance?

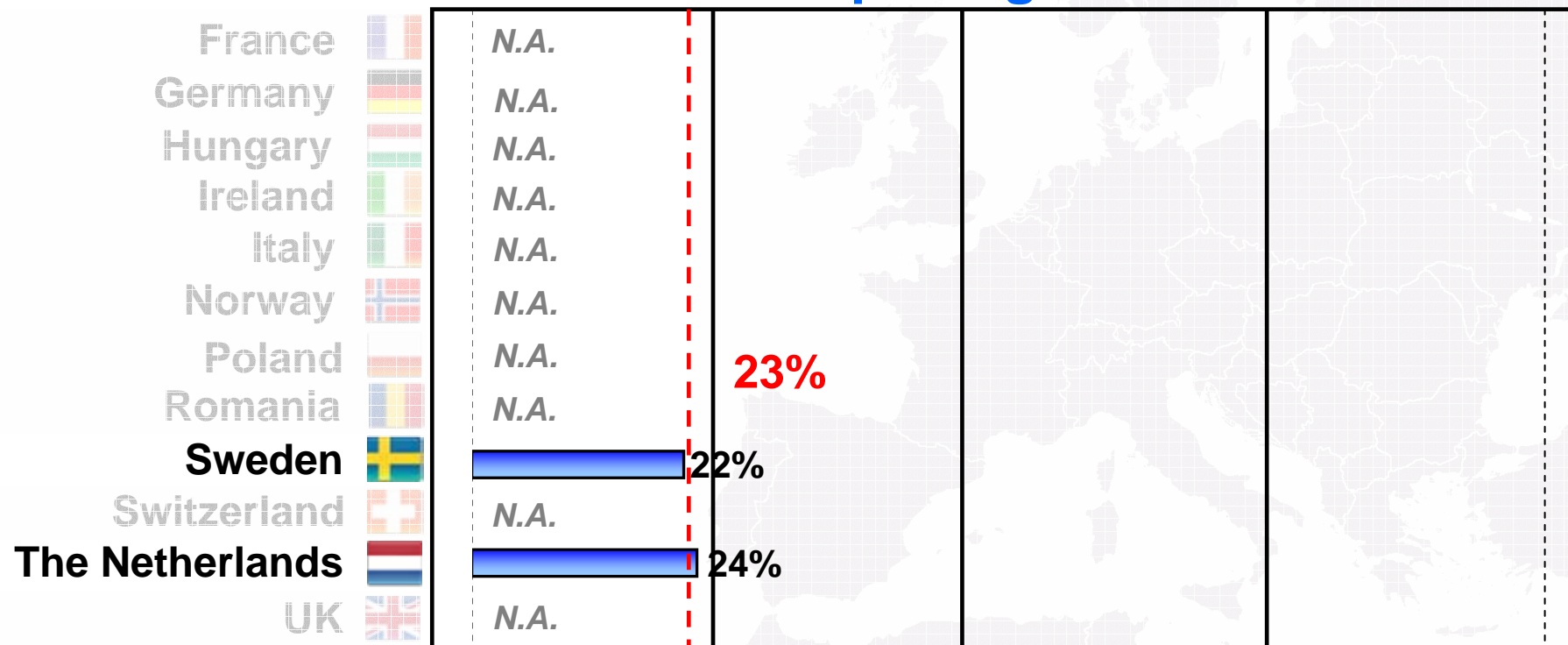

Compound interest


Inflation


Bond pricing


Mortgage


Diversification



Financial literacy in European countries

How much people in Europe know about finance?














Compound interest


Inflation


Bond pricing
Mortgage


Mortgage


Diversification

France		N.A.				
Germany		N.A.				
Hungary		N.A.				
Ireland		N.A.				
Italy		N.A.				
Norway		N.A.				
Poland		N.A.				
Romania		N.A.				
Sweden					65%	
Switzerland		N.A.				
The Netherlands		N.A.				
UK		N.A.				

Financial literacy in European countries

How much people in Europe know about finance?


Compound interest

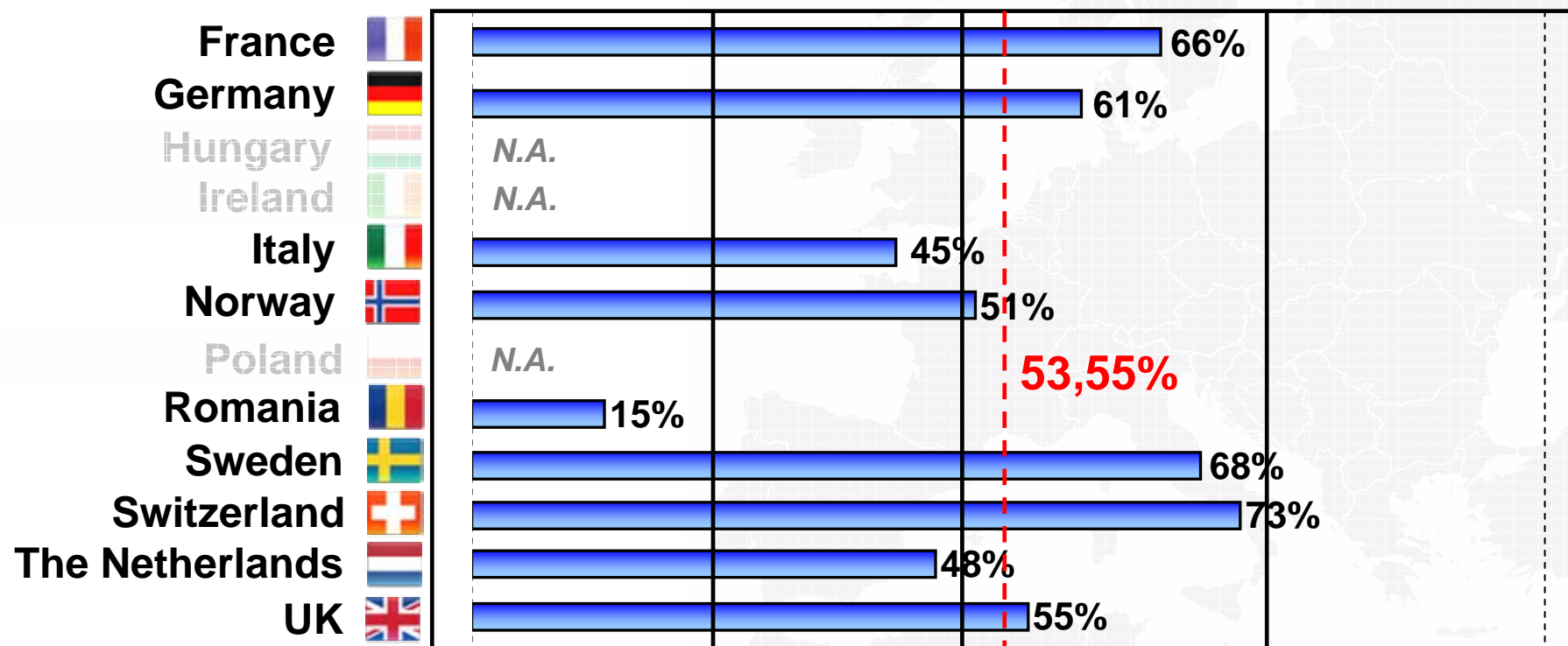

Inflation


Bond pricing


Mortgage


Diversification

Diversification



Financial literacy in European countries

How much people in Europe know about finance?



Financial literacy in European countries

How much people in Europe know about finance?



What do people need to know?

How are we measuring it?

How much do people need to know?



Financial literacy in European countries

How much people in Europe know about finance?



Difficulty of the question



Question

If $2+2 = X$

A) $X=0$

B) $X=2$

C) $X=4$

Question

If $X = -3$ the value of

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

A) -6

B) 0

C) -3

Financial literacy in European countries

How much people in Europe know about finance?



Number of options



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

Financial literacy in European countries

How much people in Europe know about finance?



Relevance of the topic

“Do you know how to drive on a frozen ground?”

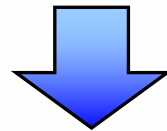


Financial literacy in European countries

How much people in Europe know about finance?



What next?



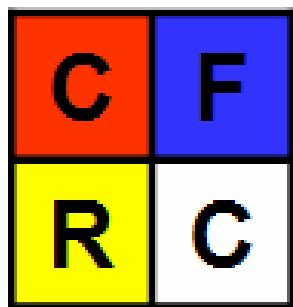
We need cross-country comparable data collected by a standard approach, taking care of different needs of knowledge in different Countries.

Financial literacy in European countries

***How much people in Europe know
about finance?***



The research project...



**Consumer Finance
Research Center**

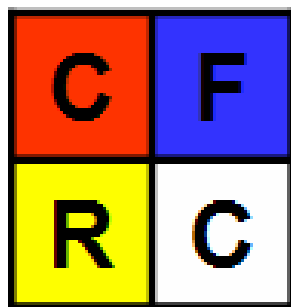
(www.consumer-finance.org)

Financial literacy in European countries

How much people in Europe know about finance?

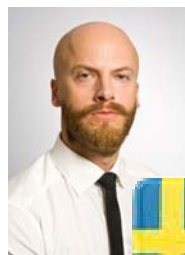


The research project...



**Consumer Finance
Research Center**

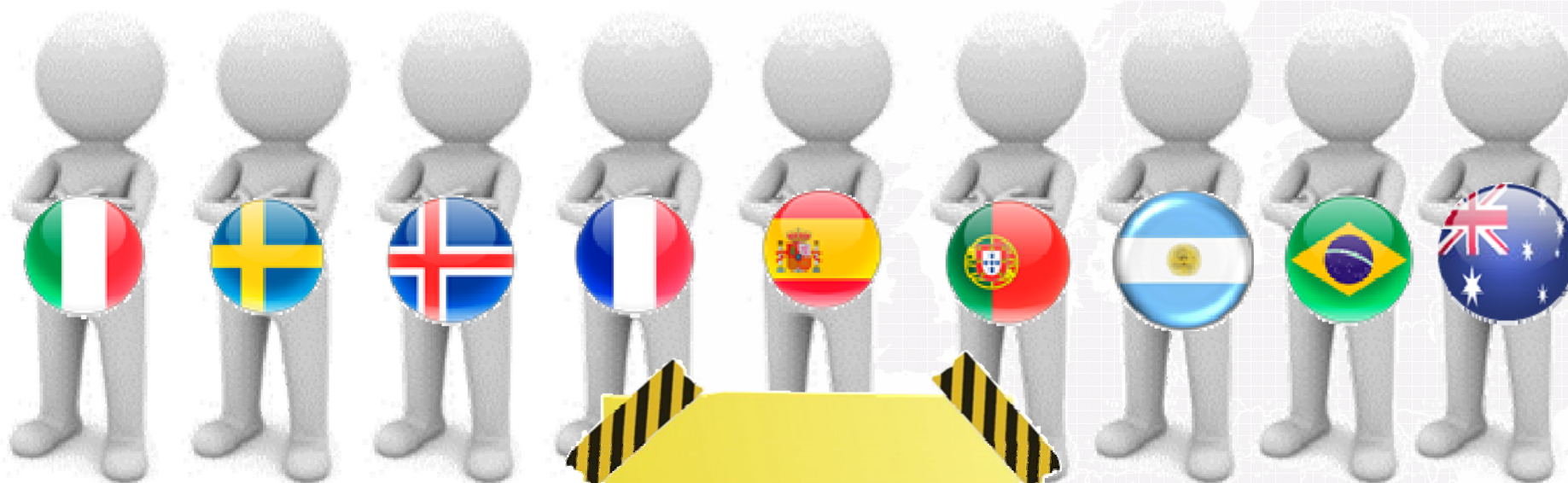
(www.consumer-finance.org)



Financial literacy in European countries

How much people in Europe know about finance?

The network



Financial literacy in European countries

How much people in Europe know about finance?



Compound interest	1	2	3	4	5
Inflation	1	2	3	4	5
Mortgage	1	2	3	4	5
Diversification	1	2	3	4	5
Bond pricing	1	2	3	4	5
<hr/>					
Bank account	1	2	3	4	5
Payments	1	2	3	4	5
Saving and Investments	1	2	3	4	5
Loan and Debts	1	2	3	4	5
Retirement and Planning	1	2	3	4	5

Standard approach



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

Financial literacy in European countries

How much people in Europe know about finance?



Compound interest	★	2	3	4	5
Inflation	★	2	3	4	5
Mortgage	★	2	3	4	5
Diversification	★	2	3	4	5
Bond pricing	★	2	3	4	5
<hr/>					
Bank account	1	2	3	4	5
Payments	1	2	3	4	5
Saving and Investments	1	2	3	4	5
Loan and Debts	1	2	3	4	5
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**Reference
point**

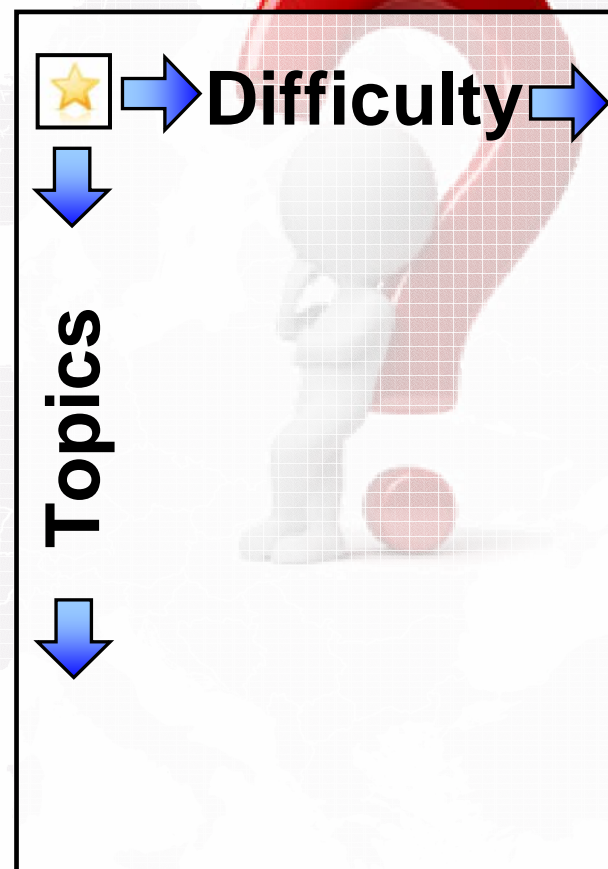


Financial literacy in European countries

How much people in Europe know about finance?



Compound interest	★	2	3	4	5
Inflation	★	2	3	4	5
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Diversification	★	2	3	4	5
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Bank account	1	2	3	4	5
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Financial literacy in European countries

How much people in Europe know about finance?



Compound interest	★	2	3	4	5
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Retirement and Planning	1	2	3	4	5

**Difficulty
levels**



**Robustness of
previous
results**

Financial literacy in European countries

How much people in Europe know about finance?



Compound interest	★	2	3	4	5
Inflation	★	2	3	4	5
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**Difficulty
levels**



**Robustness of
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Financial literacy in European countries

How much people in Europe know about finance?



Compound interest	★	2	3	4	5
Inflation	★	2	3	4	5
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Loan and Debts	1	2	3	4	5
Retirement and Planning	1	2	3	4	5

**Difficulty
levels**



Deep analysis

Financial literacy in European countries

How much people in Europe know about finance?



Compound interest	★	2	3	4	5
Inflation	★	2	3	4	5
Mortgage	★	2	3	4	5
Diversification	★	2	3	4	5
Bond pricing	★	2	3	4	5
Bank account	1	2	3	4	5
Payments	1	2	3	4	5
Saving and Investments	1	2	3	4	5
Loan and Debts	1	2	3	4	5
Retirement and Planning	1	2	3	4	5

Comparison



**Robustness of
previous
results**

Financial literacy in European countries

How much people in Europe know about finance?



Compound interest	★	2	3	4	5
Inflation	★	2	3	4	5
Mortgage	★	2	3	4	5
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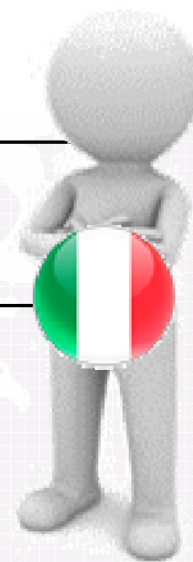
**Relevance
of the topic**



Financial literacy in European countries

How much people in Europe know about finance?

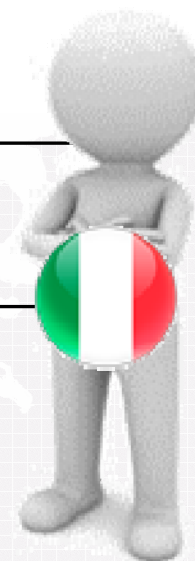
The case of Italy*



Financial literacy in European countries

How much people in Europe know about finance?

The case of Italy*

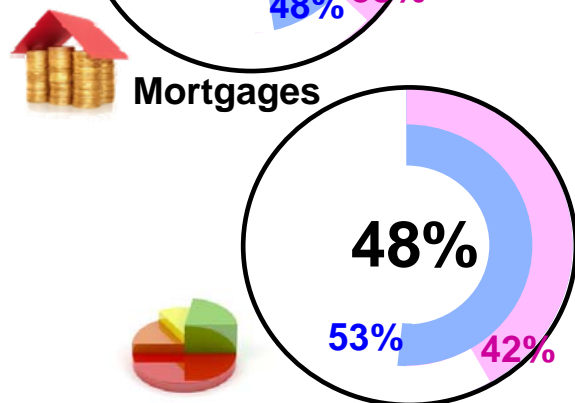
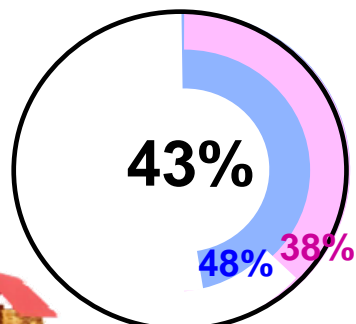
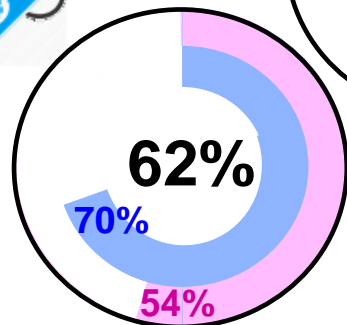
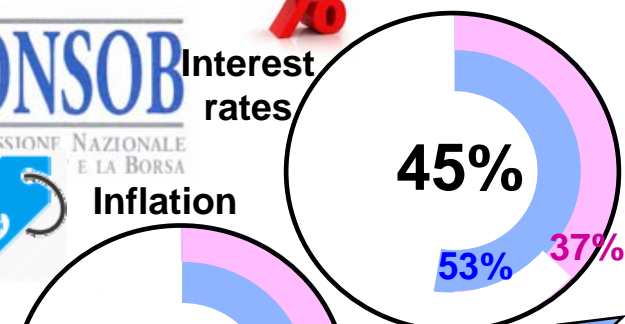
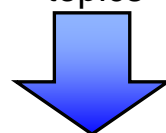


Compound interest	★		2		3		4		5	
Inflation	★		2		3		4		5	
Mortgage	★		2		3		4		5	
Diversification	★		2		3		4		5	
Bond pricing	★		2		3		4		5	
Bank account	1		2		3		4		5	
Payments	1		2		3		4		5	
Saving and Investments	1		2		3		4		5	
Loan and Debts	1		2		3		4		5	
Retirement and Planning	1		2		3		4		5	

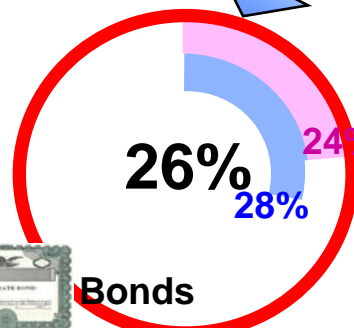
Male (18-65 years) Female (18-65 years)

Data

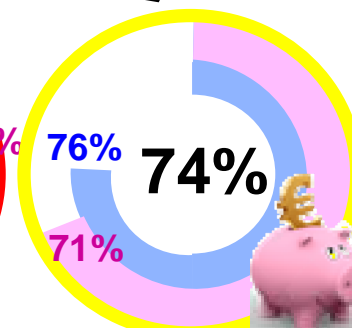
50 question on 10 topics



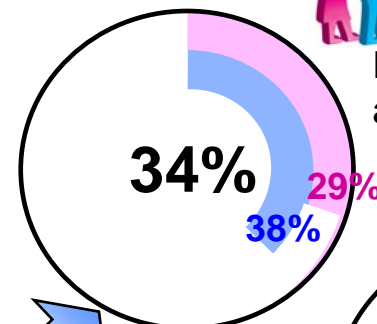
Diversification



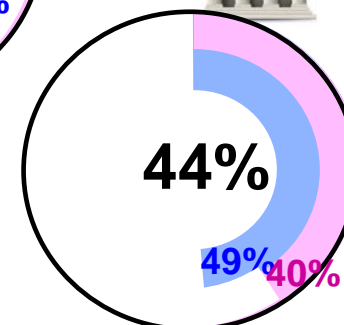
Bonds



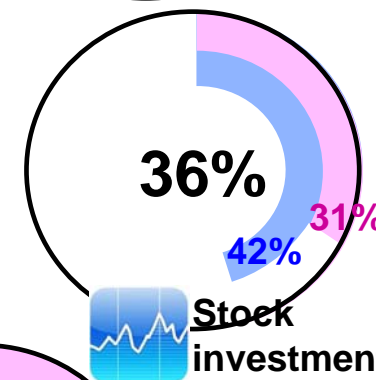
Bank accounts



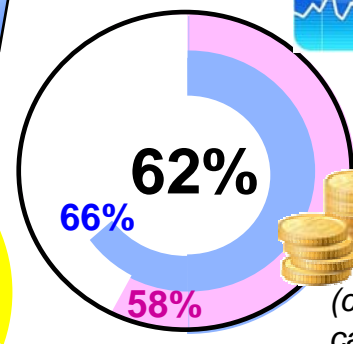
Retirement and Insurance



Debts



Stock investments



Payments

(credit cards, debit cards, etc.)

Male (18-65 years) Female (18-65 years)

Data

50 question on 10 topics



Retirement and Insurance



Debts



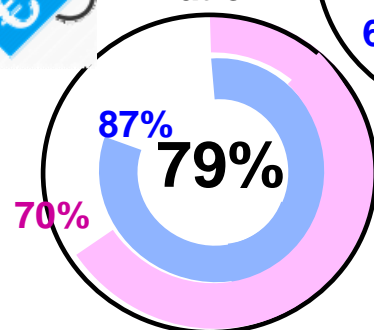
62%

(% of correct answers to all the 50 questions)

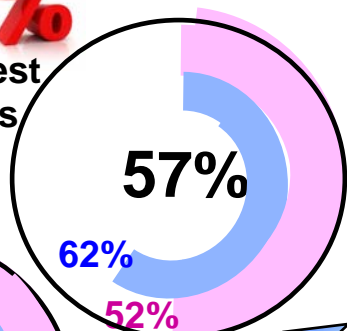
69%

54%

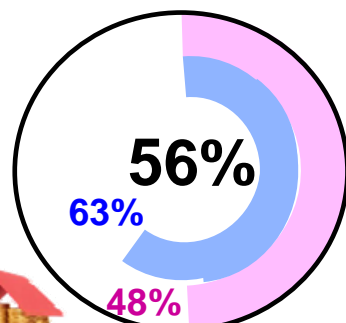
Inflation



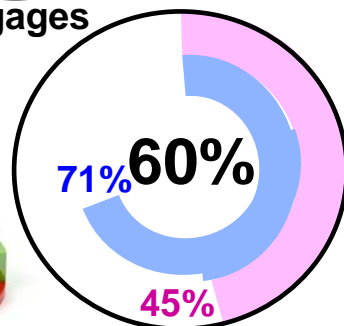
Interest rates



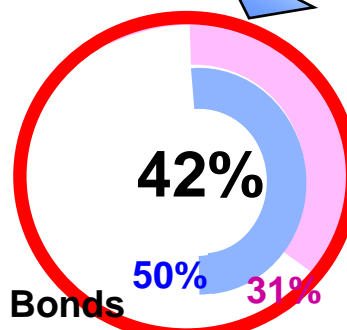
Mortgages



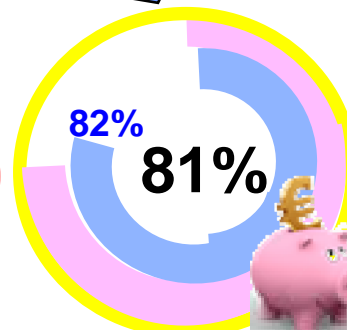
Diversification



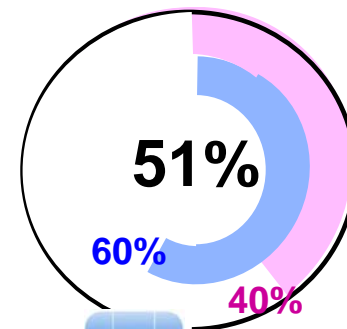
Bonds



Bank accounts

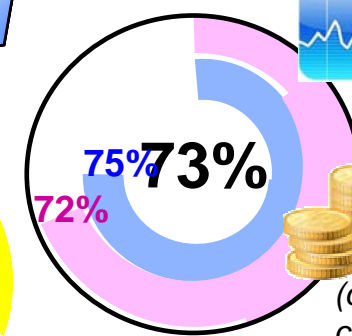


Stock investments



Payments

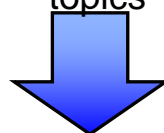
(credit cards, debit cards, etc.)



Male (18-65 years) Female (18-65 years)

Data

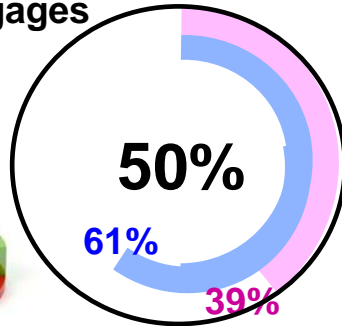
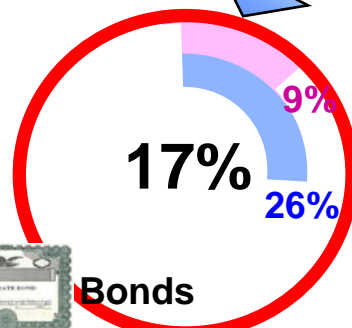
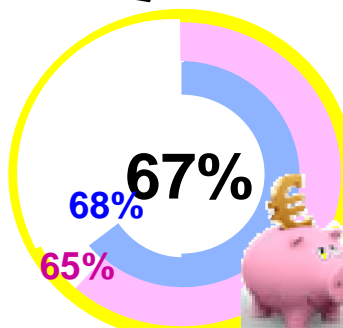
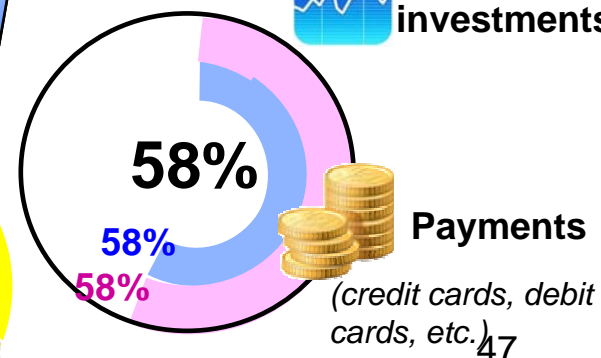
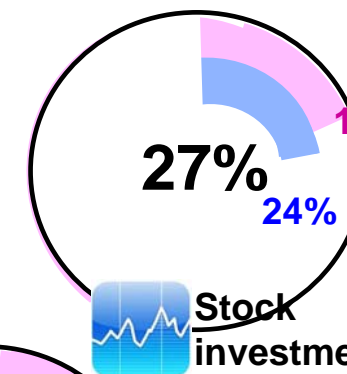
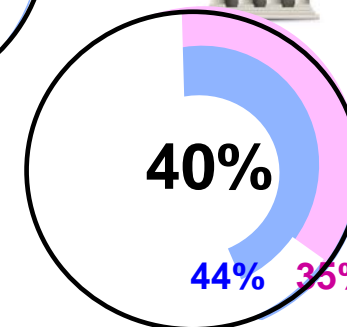
50 question on 10 topics



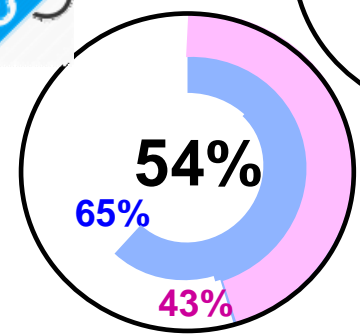
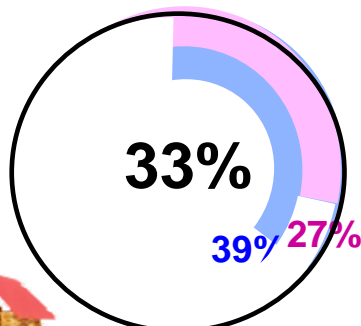
Retirement and Insurance



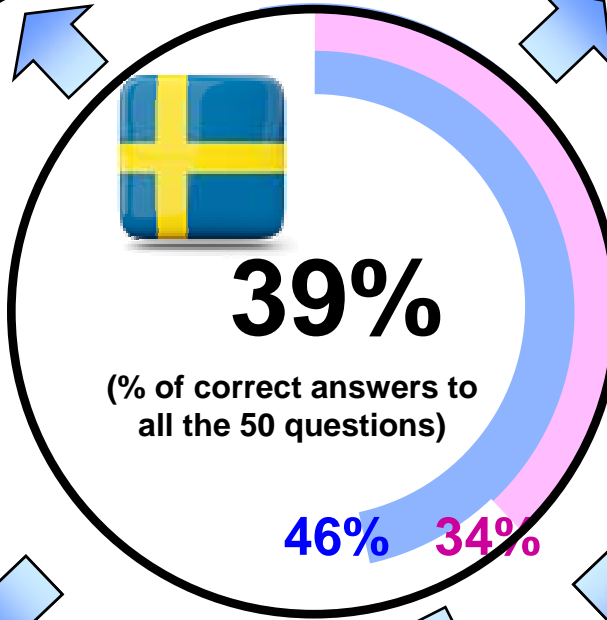
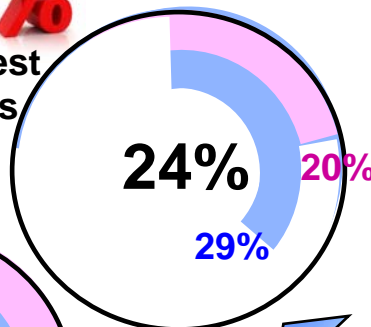
Debts



Mortgages



Interest rates



Diversification



Bonds



Bank accounts



Payments

(credit cards, debit cards, etc.)

Metodi di rilevazione delle competenze finanziarie

Conclusions

1

We need more than 5 questions...

2

We need to know the questions... *(not just the final score)*

3

One size does NOT fit all

(We need questions related with a specific financial behavior)

4

We need country level data

(Different countries have different knowledge needs)

5

Different targets have different

knowledge needs *(children, young adults, adults, elderly)*

5

Financial Literacy and Financial

Behavior... *(then Financial Education)*

CONSOB – Commissione Nazionale per le Società e la Borsa

Roma, Giovedì 2 Marzo 2017

Metodi di rilevazione delle competenze finanziarie

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