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The Assessment of Financial Literacy: the Case of Europe

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Agenda

1 Financial Literacy: definitions

2 The Relevance of Financial Literacy

3 The Assessment of Financial Literacy

4 The Data

5 Financial Literacy in Europe

6 Conclusions

Financia Literacy
Definitions

Financial Literacy
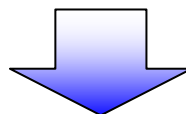*Knowledge* and *Ability*

1992 "*The ability to make informed judgements and to make effective decisions regarding the use and management of money*"
(Noctor, Stoney and Stradling 1992)

2000 "*The ability to read, analyse, manage and communicate about the personal financial conditions that affect material wellbeing*"
(Vitt et al. 2000)

2001 "*Financial literacy is a basic knowledge that people need in order to survive in a modern society*"   (Kim 2001)

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)

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)

2010 "*Financial literacy consists of both knowledge and application (ability) of human capital specific to personal finance*"   (Huston 2010)

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)

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Financia Literacy
The Relevance

Financial Literacy
Knowledge and *Ability*

Financial Behavior

- **Stock market participation**
  Arrondel, Debbich, Savignac (2012)
  Van Rooij, Lusardi and Alessie (2011)
  Yoong (2010)

- **Asset Allocation**
  Agnew (2004)

- **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 al. (2004)
  Lusardi (2004)
  Lusardi and Mitchell (2006, 2008)
  Behrman et al. (2010)
  Almenberg and Säve-Söderberg (2011)

- **Use of Internet banking**
  Servon and Kaestner (2008)

- **Bankruptcy**
  Thorne and Porter (2007)

- **Subprime mortgage deliquency**
  Gerardi et al. (2010)

- **Financial Stress**

- **Overindebtdness**
  Lusardi and Tufano (2009)

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Financia Literacy
The Relevance

"Financial Literacy matters when we try to explain financial behaviors"

Financial Knowledge and Credit Card Behavior of College Students

Cliff A. Robb

Abstract This study examined the relationship between financial knowledge and credit card behavior of college students. The widespread availability of credit cards has raised concerns over how college students might use those cards given the negative consequences (both immediate and long-term) associated with credit abuse and misman- agement. Using a sample of 1,354 students from a major southeastern university, results suggest that financial knowledge is a significant factor in the credit card deci- sions of college students. Students with higher scores on a measure of personal financial knowledge are more likely to engage in more responsible credit card use. Specific behaviors chosen have been associated with greater costs of borrowing and adverse economic consequences in the past. potential to earn much higher incomes in the near future. Also, the college student lifestyle offers many opportuni- ties to use credit cards—both as a convenience and as a short term loan—for things such as emergency car repair, a weekend trip, and internet purchases. Expansion of the credit card market to college students has led to credit cards becoming a way of life for today's college students. Recent data from Sallie Mae (2009) indicate that 84% of undergraduates have a credit card and the average number of cards carried per cardholder is 4.6. This supports a general trend of increasing credit card ownership, as roughly 67% of undergraduates had cards in 1998, and 83% had cards in 2001 (Nellie Mae 2002). In addition, the average undergraduate carries over three thousand dollars in credit card debt, the highest level since the company

Financial Illiteracy
Evidence from t

Volume 6 | Issu

Financial I   7-1-2013

Maarten van   Financia

Luc Arrondel
CNRS-PSE and Ba

Majdi Debbich
Banque de France a

Frédérique Savi
Banque de France, f

Pension Resea
Pensi
The Wharton Sch
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http://www.

Abstract
We study financ
approach. We fi
people as well as
financial concep
differences in fir
these difference:
score higher on

defined financia

Financially unsophisticate consume
may suffer lasting consequences fo
focuses attention on a well-document
the lack of stock market participati
administered to a sample of older
(ALP), we use a novel strategy for es
literacy and stock market participatio
variables. We find that ignorance of
propensity to hold stocks. In partic
measure suggests a decrease on the order of 10% in participation.

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Financia Literacy
The Assessment

"Most of the time Financial Literacy is assessed by a small number of items"

*"…**five questions** that explore numerical skills and the understanding of basic concepts, such as inflation, interest rates, compound interest, and the time value of money."*

*"the basic literacy index is calculated from a factor analysis based on **five simple questions.**"*

*"respondents are asked **five questions**...These questions cover respondents' ability to perform simple calculations, understand how compound interest works, and understand inflation."*

*"Financial knowledge is measured using **six questions** dealing with general financial practices."*

*"...following the benchmark questions proposed by Lusardi and Mitchell (2011c) and additional questions on financial culture. We restrict our analysis to **three questions**."*

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Financia Literacy
The Assessment

Financial Literacy
Knowledge and *Ability*

2004

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
	Don't know
	Prefer not to say

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Financia Literacy
The Assessment

Financial Literacy
Knowledge and *Ability*

Compound interest — **Inflation** — **Bond pricing** — **Mortgage** — **Diversification**

Inflation

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)
	Prefer not to say

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Financia Literacy
The Assessment

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
	Don't know
	Prefer not to say

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Financia Literacy
The Assessment

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
	Don't know
	Prefer not to say

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Financia Literacy
The Assessment

2004

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)
	Don't know
	Prefer not to say

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Financia Literacy
The Assessment

Financial Literacy
Knowledge and *Ability*

$$\sum \star_0^1 + \star_0^1 + \star_0^1 + \star_0^1 + \star_0^1$$

(correct answer = 1) (correct answer = 1) (correct answer = 1) (correct answer = 1) (correct answer = 1)
(… zero otherwise) *(… zero otherwise)* *(… zero otherwise)* *(… zero otherwise)* *(… zero otherwise)*

=

Financial Knowledge Index
…as sum of correct answers
Range [0;5]

Moore (2003)   Sabri *et al.* (2008)

Robb and Sharpe (2009)   Gerardi, Goette, and Meier (2010)

Agnew and Szkyman (2005)   12

Financia Literacy
The Assessment

> **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)

Financia Literacy
The Assessment

Financial Literacy
Knowledge and *Ability*

(correct answer = 1) (correct answer = 1) (correct answer = 1) (correct answer = 1) (correct answer = 1)
(… zero otherwise) *(… zero otherwise)* *(… zero otherwise)* *(… zero otherwise)* *(… zero otherwise)*

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0   100% 0   100% 0   100% 0   100% 0   100%

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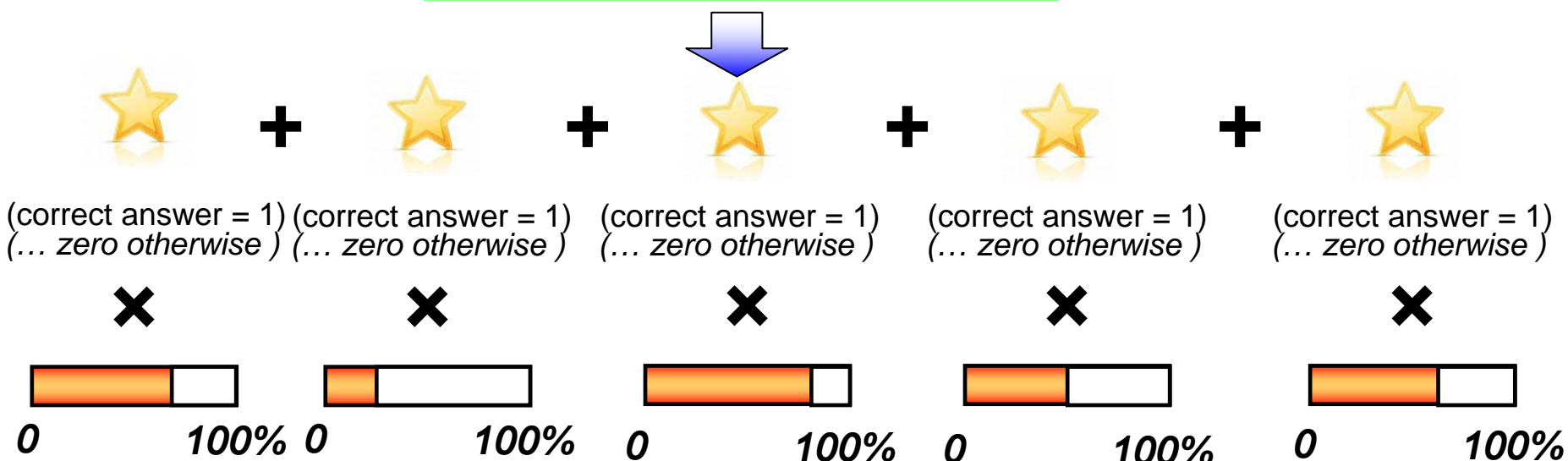
Financial Knowledge Index as sum of correct answers… weighted by their difficulty
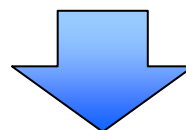
Lusardi, Mitchell, and Curto (2012)

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Financia Literacy
The Assessment

"The magnitude of the Financial Literacy influence on financial behaviors is not always very big"

Multivariate regression analysis of retirement planning.

	OLS (1)	OLS (2)	GMM (3)
Sophisticated financial literacy		0.047***	0.28***
Basic financial literacy		0.010	−0.062**
		(0.95)	(−2.75)
Age dummy (30 < age ⩽ 40)	0.13***	0.14***	0.16***
	(2.83)	(2.94)	(3.14)
Age dummy (40 < age ⩽ 50)	0.18***	0.18***	0.19***
	(3.87)	(3.83)	(3.76)
Age dummy (50 < age ⩽ 60)	0.30***	0.29***	0.27***
	(6.70)	(6.65)	(5.78)
Age dummy (60 < age ⩽ 70)	0.31***	0.31***	0.28***
	(5.53)	(5.46)	(4.63)
Age dummy (age > 70)	0.32***	0.32***	0.30***
	(5.00)	(4.99)	(4.30)
Intermediate vocational education	0.030	0.020	−0.0024
	(0.82)	(0.55)	(−0.058)
Secondary pre-university education	−0.00063	−0.029	−0.090*
	(−0.016)	(−0.74)	(−1.88)
Higher vocational education	0.051	0.025	−0.039
	(1.57)	(0.75)	(−0.98)
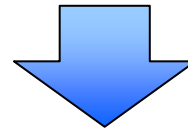
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Financia Literacy
The Assessment

"The magnitude of the Financial Literacy influence on financial behaviors is not always very big"

Table 5
OLS Estimates of Financial Planning on Financial Literacy

Dependent Variable	"Have you personally gathered together your household's financial information, reviewed it in detail, and formulated a specific financial plan for your household's long-term future?" Yes = 1 / No = 0					
Financial Literacy	**(1)**		**(2)**		**(3)**	
All three correct	0.091***	(0.021)				
Total number correct			0.053***	(0.010)		
Interest Correct					0.041**	(0.021)
Inflation Correct					0.066***	(0.022)
Risk Correct					0.053**	(0.023)
Other Controls						
Age	-0.006	(0.008)	-0.007	(0.008)	-0.007	(0.008)
Age²	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
Man	0.025	(0.020)	0.025	(0.020)	0.024	(0.020)
Lower sec. (Isced 2)	-0.012	(0.071)	-0.026	(0.071)	-0.028	(0.071)
Upper sec. (Isced 3)	-0.007	(0.061)	-0.021	(0.061)	-0.023	(0.061)
Some College (Isced 5)	0.053	(0.064)	0.032	(0.064)	0.029	(0.064)
College grad (Isced 5)	0.120*	(0.067)	0.099	(0.067)	0.096	(0.067)
Post grad. (Isced 6)	0.168**	(0.071)	0.149**	(0.071)	0.147**	(0.071)
Single	0.039	(0.025)	0.036	(0.025)	0.036	(0.025)
Divorced	0.013	(0.038)	0.010	(0.038)	0.010	(0.038)
Widowed	0.096	(0.083)	0.095	(0.082)	0.098	(0.083)
Income Q2	0.084***	(0.031)	0.075**	(0.031)	0.074**	(0.031)
Income Q3	0.080**	(0.034)	0.070**	(0.034)	0.069**	(0.034)
Income Q4	0.151***	(0.034)	0.136***	(0.034)	0.135***	(0.034)
Self-employed	0.054	(0.048)	0.054	(0.048)	0.054	(0.048)
Not working	0.005	(0.027)	0.004	(0.027)	0.003	(0.027)
Constant	0.119	(0.182)	0.101	(0.181)	0.112	(0.182)

Financia Literacy
The Assessment

"The magnitude of the Financial Literacy influence on financial behaviors is not always very big"

Table 6: OLS Estimates: Stock Market Illiteracy, Beliefs And Participation

	(1) Own any stock	(2) Own any stock	(3) Own any stock	(4) Own any stock
Stock-Market Illiteracy Index	-0.13*** (0.02)	-0.12*** (0.02)	-0.10*** (0.02)	-0.10*** (0.02)
Basic Financial Knowledge Index		0.05** (0.02)	0.06** (0.02)	0.06** (0.02)
Overestimate risk relative to returns		-0.13** (0.05)	-0.10 (0.06)	
Underestimate risk relative to returns		-0.04 (0.13)	0.06 (0.14)	
Don't Know: Bond Pricing		-0.02 (0.05)	0.00 (0.06)	
Log of 2002 Income			0.05** (0.02)	0.06** (0.02)
Constant	0.25 (0.15)	0.27 (0.15)	-0.14 (0.23)	-0.18 (0.23)
N	533	533	462	462
R-squared	0.17	0.20	0.19	0.18

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Financia Literacy
The Assessment

Is Financial Literacy "weak"?

So…

or

Is the way we measure Financial Literacy "weak"?

Not enough info?
(lack of items)

Not the right info?
(too basic questions)

The Data

Consumer Finance Research Center

Socio-Demo profile	+	Financial Literacy	+	Financial Behaviors

	1	2	3	4	5
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
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

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The Data

Consumer Finance Research Center

Socio-Demo profile	+	Financial Literacy	+	Financial Behaviors

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

⭐ **Lusardi-Mitchell**
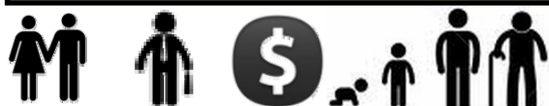(range 0-5)

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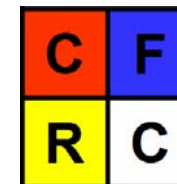
Consumer Finance Research Center

Socio-Demo profile	+	Financial Literacy	+	Financial Behaviors
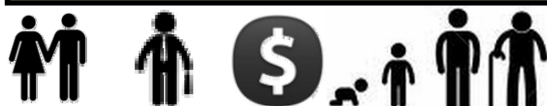
Compound Interest	✓ ✓ ✓ ✓ ✓
Inflation	✓ ✓ ✓ ✓ ✓
Mortgage	✓ ✓ ✓ ✓ ✓
Diversification	✓ ✓ ✓ ✓ ✓
Bond pricing	✓ ✓ ✓ ✓ ✓
Bank account	✓ ✓ ✓ ✓ ✓
Payments	✓ ✓ ✓ ✓ ✓
Saving and Investments	✓ ✓ ✓ ✓ ✓
Loan and Debts	✓ ✓ ✓ ✓ ✓
Retirement and Planning	✓ ✓ ✓ ✓ ✓

⭐ **Lusardi-Mitchell**
(range 0-5)

✓ **All**
(range 0-50)

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The Data

Consumer Finance Research Center

Socio-Demo profile	+	Financial Literacy	+	Financial Behaviors

	1	2	3	4	5
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
Bank account	1	2	3	4	5
Payments					
Saving and Investments	1	2	3	4	5
Loan and Debts	1	2	3	4	5
Retirement and Planning	1	2	3	4	5

Lusardi-Mitchell (range 0-5)

All (range 0-50)

5 specific (range 0-5)

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The Data

Consumer Finance Research Center

Socio-Demo profile	+	Financial Literacy	+	Financial Behaviors

|					
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
Bank account					
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

Lusardi-Mitchell
(range 0-5)

All
(range 0-50)

5 specific
(range 0-5)

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The Data

Consumer Finance Research Center

Socio-Demo profile	+	Financial Literacy	+	Financial Behaviors

Compound Interest	1	2	3	4	5
Inflation	1	2	3	4	5
Mortgage	1	2	3	4	5
Diversification					
Bond pricing	1	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

Lusardi-Mitchell (range 0-5)

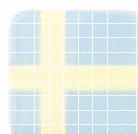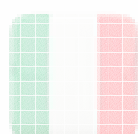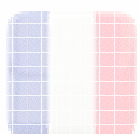**All** (range 0-50)

5 specific (range 0-5)

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Financial Literacy in Europe

Financial Literacy in Europe
The case of the UK

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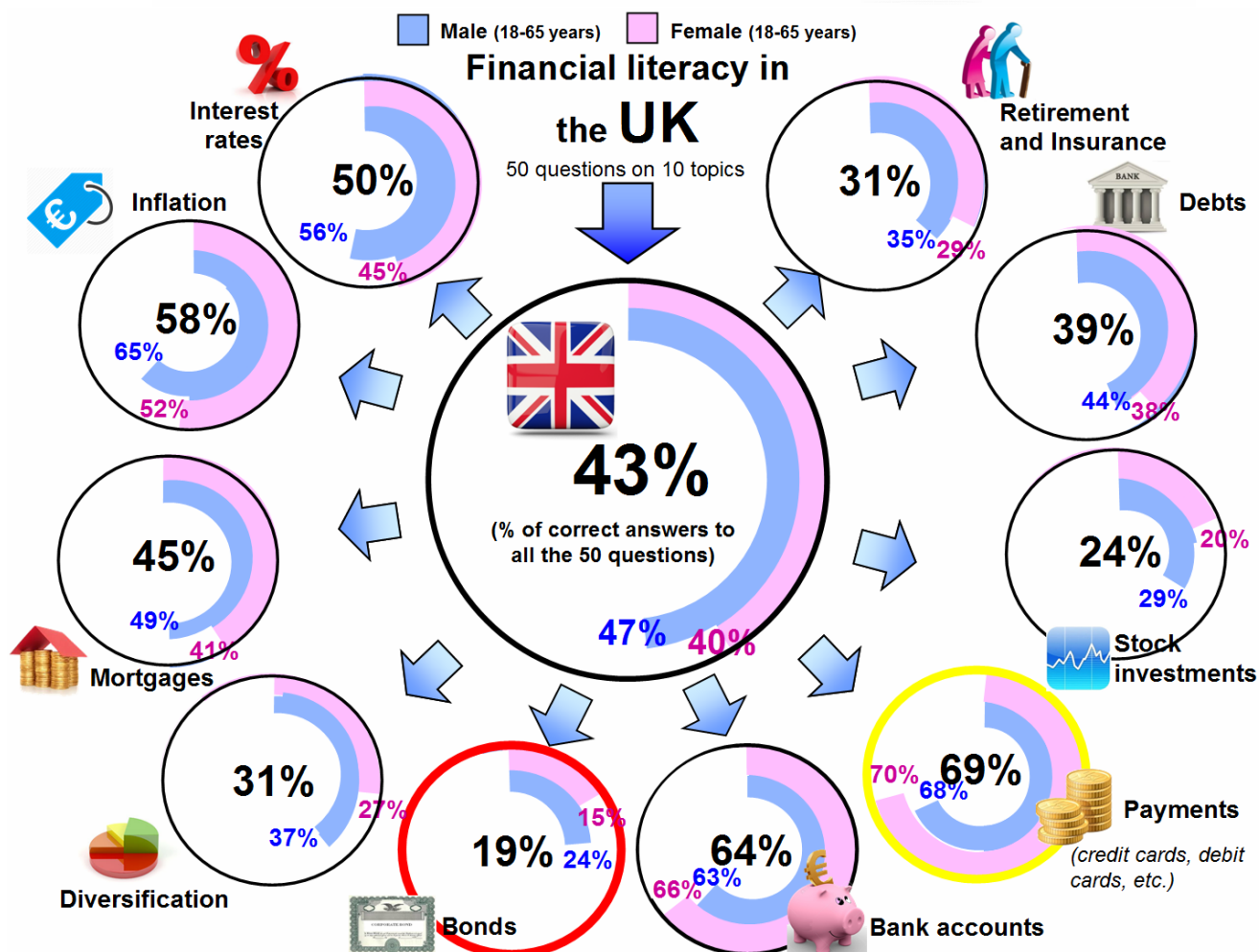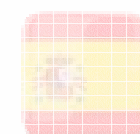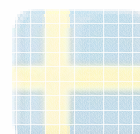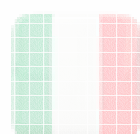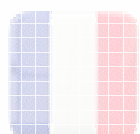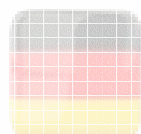
Financial Literacy in Europe
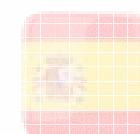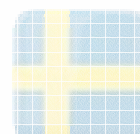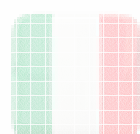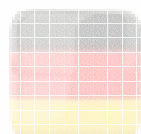## *The case of Germany*

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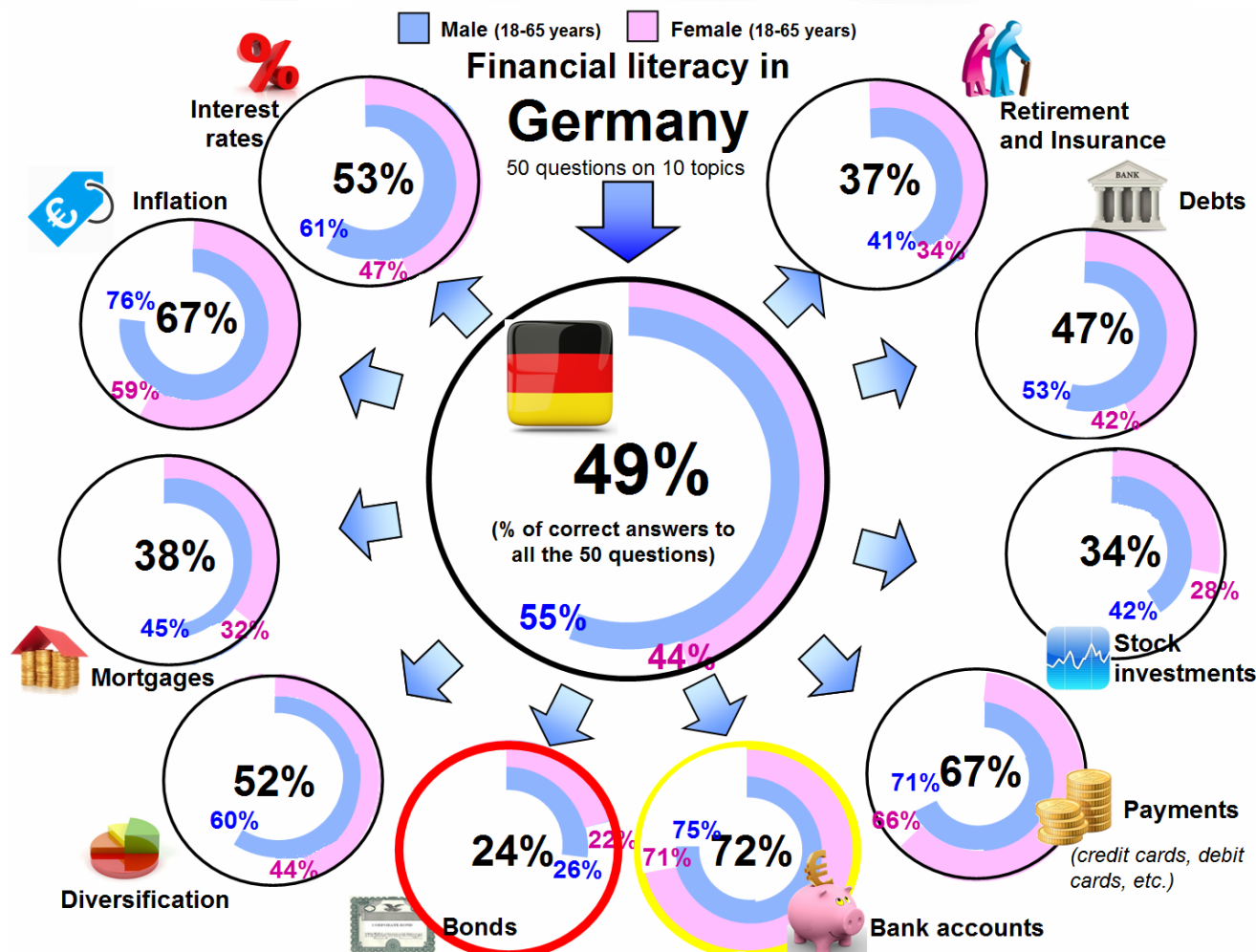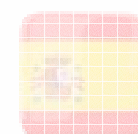
Financial Literacy in Europe
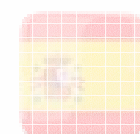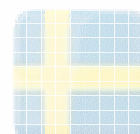## *The case of France*

Financial literacy in **France**
50 questions on 10 topics

39%
(% of correct answers to all the 50 questions)

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

Interest rates: 46% — 51% / 41%
Inflation: 59% — 62% / 56%
Mortgages: 39% — 43% / 36%
Diversification: 35% — 41% / 29%
Bonds: 19% — 25% / 13%
Bank accounts: 66% — 61% / 71%
Payments (credit cards, debit cards, etc.): 52% — 51% / 53%
Stock investments: 20% — 25% / 16%
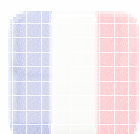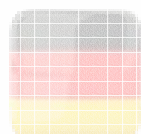Debts: 31% — 33% / 30%
Retirement and Insurance: 21% — 24% / 18%

Central: 42% / 36%

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Financial Literacy in Europe
The case of Italy
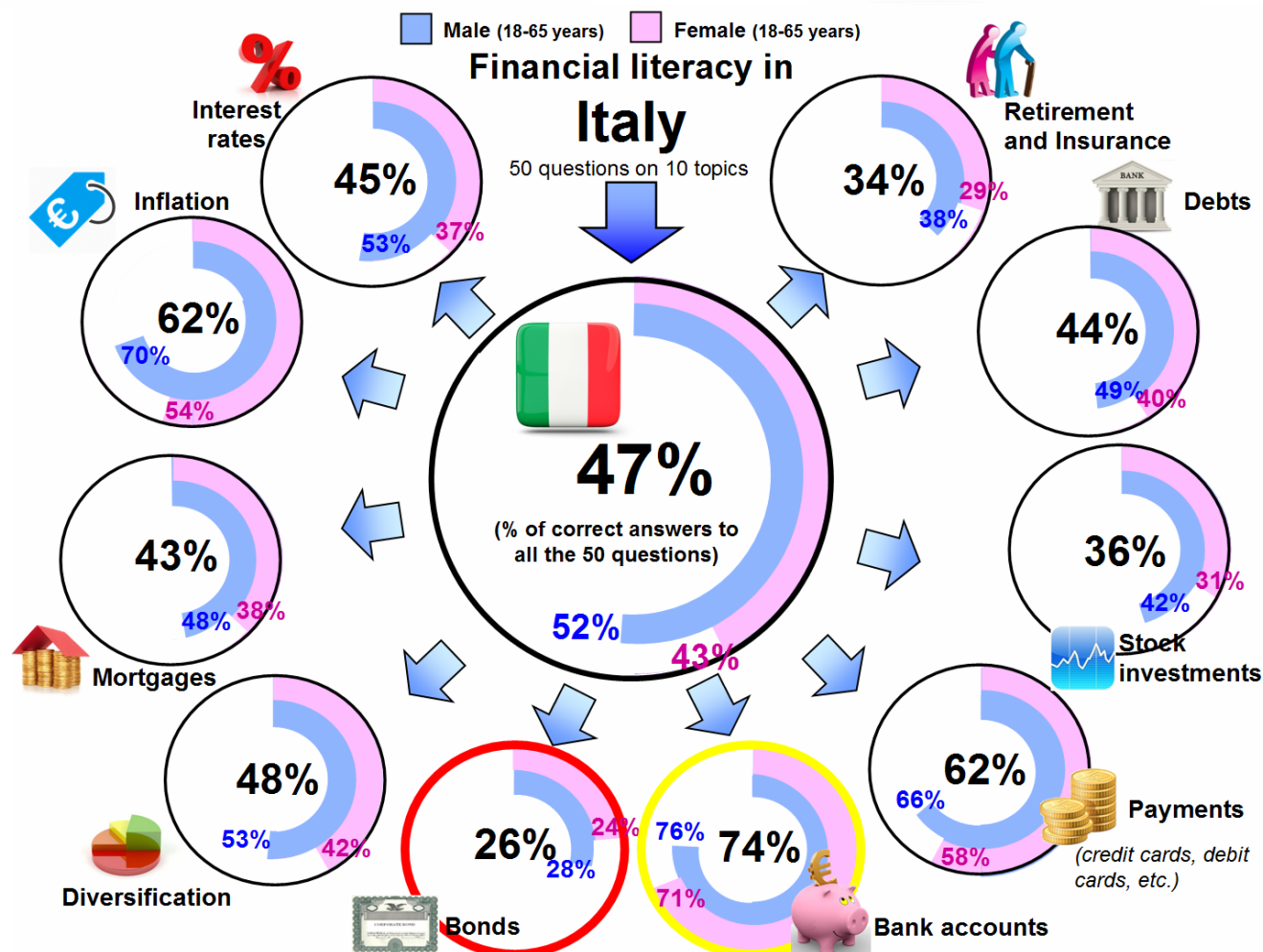
Financial Literacy in Europe
The case of Sweden

Financial literacy in Sweden
50 questions on 10 topics

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

Interest rates — 23% — 20% — 29%

Inflation — 51% — 64% — 43%

Mortgages — 31% — 38% — 28%

Diversification — 47% — 60% — 39%

Bonds — 16% — 9% — 26%

Bank accounts — 66% — 68% — 65%

Payments (credit cards, debit cards, etc.) — 58% — 58% — 58%

Stock investments — 25% — 19% — 34%

Debts — 38% — 44% — 35%

Retirement and Insurance — 25% — 20% — 31%

39%
(% of correct answers to all the 50 questions)
46%   34%

30

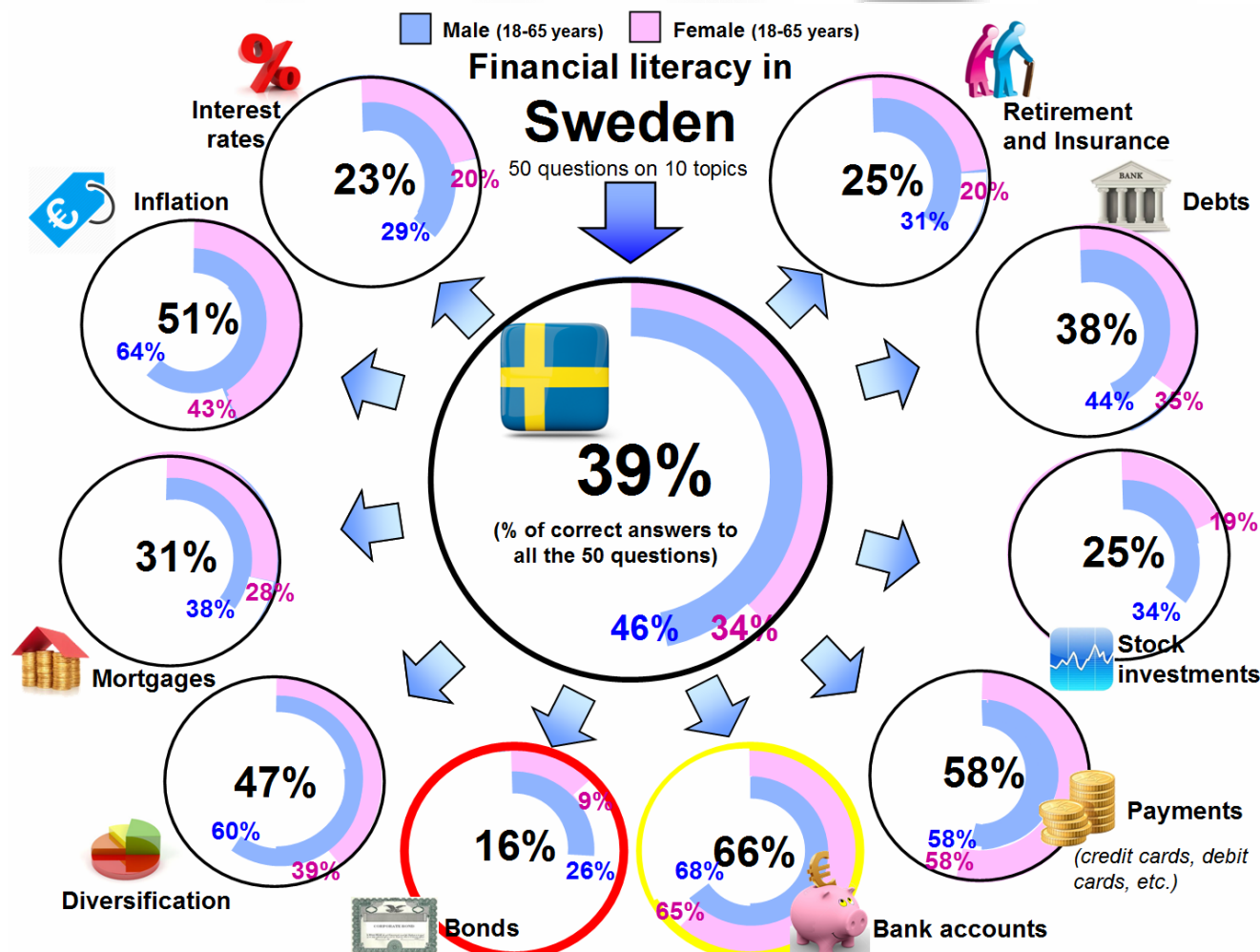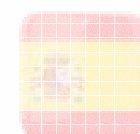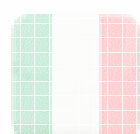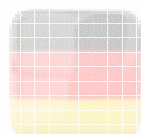# Financial Literacy in Europe
The case of Spain

Financial literacy in **Spain** — 50 questions on 10 topics

62% (% of correct answers to all the 50 questions)

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

- Interest rates: 57% (62% / 52%)
- Retirement and Insurance: 63% (71% / 53%)
- Inflation: 79% (87% / 70%)
- Debts: 57% (66% / 45%)
- Mortgages: 56% (63% / 48%)
- Stock investments: 51% (60% / 40%)
- Diversification: 60% (71% / 45%)
- Payments (credit cards, debit cards, etc.): 73% (74% / 72%)
- Bonds: 42% (50% / 31%)
- Bank accounts: 81% (82% / 80%)

Overall Spain: 69% / 54%

31

Conclusions

1 **Financial Literacy is in average low**
(Germany 49%, Italy 47%, the UK 43%, France and Sweden 39%)

2 **Investment related topics are the most critical areas**
(Bond: Italy 26%, Germany 24%, France 19%, the UK 19%, Sweden 16%)
(Stock: Italy 36%, Germany 34%; Sweden 25%, the UK 24%, France 20%)

3 **Bank accounts and Payments tools show top scores**
(Bank Account: Italy 74%, Germany 72%; France 66%, Sweden 66%, the UK 64%)
(Payment tools: the UK 69%, Germany 67%; Italy 62%, Sweden 58%, France 52%)

4 **The "Gender gap"**
Females know on average less than males (…with few exceptions)

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The Assessment of Financial Literacy: the Case of Europe

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