

Financial Literacy: Why Should Central Banks Care

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Policy brief

The state of financial knowledge in the European Union

Financial literacy is essential in modern economies, where saving and preparing for retirement has shifted increasingly to the individual.

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Topics I will cover today

- Measurement and data
- How financial literacy is linked to financial decisions (saving for the short and long term, borrowing and debt management)
- Implications of findings for policy and programs

Why should central banks (CB) care about financial literacy?

➤ **Saving for the future/ retirement**

- Low financial literacy (FL): less likely to invest in the stock markets and to use the best savings products
- Implications for monetary policy transmission

➤ **Debt management**

- Low financial literacy: limited shopping for best debt products/ inefficient debt decisions that lock them in costlier debt servicing
- Implications for financial stability

➤ **Financial fragility**

- Low FL: not save enough/ not well-prepared to cope with shocks (yet, more exposed to shocks)
- Implications for financial fragility of households and the financial system

➤ **Effectiveness of CB communication**

- Low FL: less likely to receive CB news and lower knowledge of CB objectives and the effectiveness of policies. Also less trust in CB
- Implications for CB communication

Learning from new data

- Recent evidence about the Big Three
- Personal Finance Index (P-Fin Index)
- Flash Eurobarometer 525: Monitoring the level of financial literacy in the EU
- Consumer Expectations Survey (CES) from ECB

Approach to empirical analysis

Financial literacy/personal finance approach

- Do people have the **knowledge** of the **fundamental** concepts at the **basis of financial decision-making**?
- Can people **use** their **financial literacy** in an **effective** way?
- Do people **search** and **compare** terms and conditions when making financial decisions?
- Do people **engage in behavior conducive** to **financial resilience/wellbeing**?

A simple but effective method to measure financial literacy

These are the questions I designed jointly with Olivia Mitchell, known as the “Big Three.”
One question is about inflation:

The Big Three

1. “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?”
2. “Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, with the money in this account, would you be able to buy...”
3. “Do you think the following statement is true or false? Buying a single company stock usually provides a safer return than a stock mutual fund.”

- More than \$102
- Exactly \$102
- Less than \$102
- Don't know
- Refuse to answer

- More than today
- Exactly the same as today
- Less than today
- Don't know
- Refuse to answer

- True
- False
- Don't know
- Refuse to answer

Most recent evidence on financial literacy from Big Three

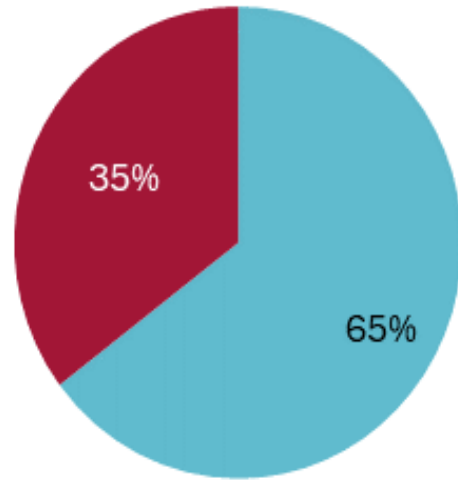
Evidence from many countries and with a focus on knowledge of inflation **continues to show very low level of financial literacy** (special issue of the *Journal of Financial Literacy and Wellbeing*, 2023)

- ❖ USA
- ❖ Canada
- ❖ Germany
- ❖ Italy
- ❖ Finland
- ❖ Eastern Europe (9 countries)
- ❖ Japan
- ❖ Singapore
- ❖ Latin America (Peru and Uruguay)

See also special issues of the Journal of Pension Economics and Finance (2011)



Evidence from the EU: More than one in three, in the EU, do not understand the effects of inflation



■ Correct ■ Incorrect

Source: Flash Eurobarometer, 2023

Measuring personal finance knowledge

- The TIAA-Institute-GFLEC Personal Finance Index (P-Fin Index) is an annual measure of knowledge and understanding which enable sound financial decision-making and effective management of personal finances among U.S. adults.
- In addition to personal finance knowledge, it provides information on financial well-being indicators.
- Data is now collected on a representative sample of about 3,500 respondents (age 18+).
- Data collection started at the end of 2016 and is done on a yearly basis.



What is unique: 8 functional areas of personal finance

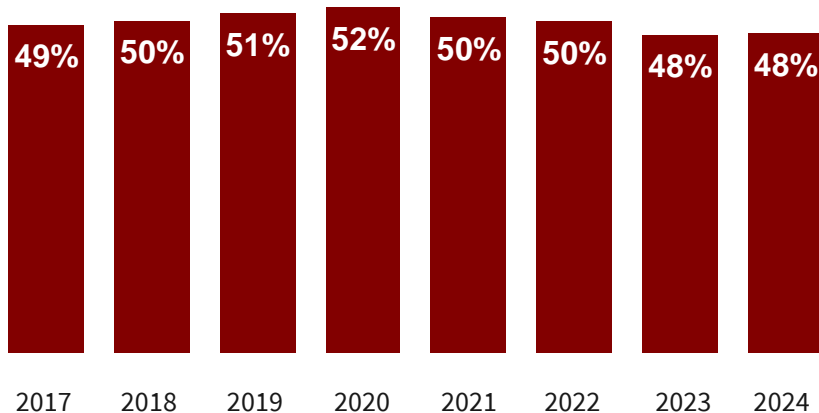
The index is based on responses to **28 questions**, with three or four questions for each of the **eight functional areas** (from the National Standards for Financial Literacy).

The P-Fin Index's 28 questions cover eight functional areas:

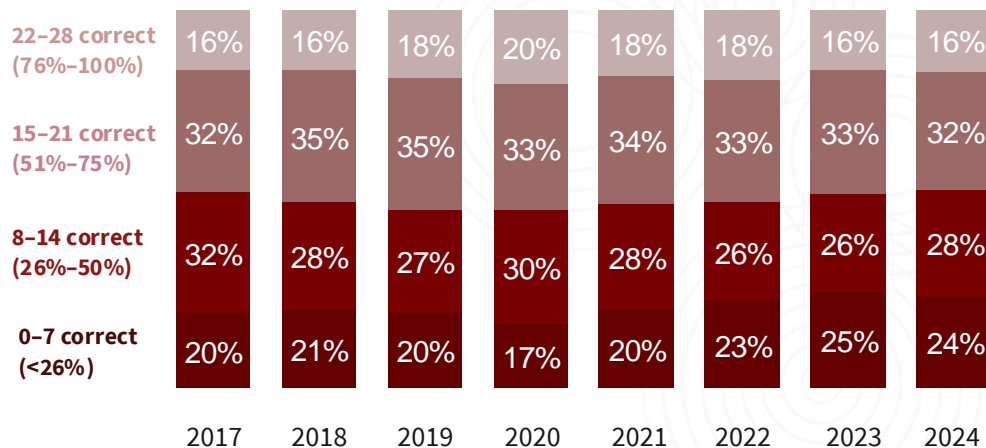
1. Earning
2. Saving
3. Consuming
4. Investing
5. Borrowing
6. Insuring
7. Comprehending risk
8. Go-to information sources

Financial (il)literacy is holding steady: 2017-2024

% of P-Fin Index questions answered correctly

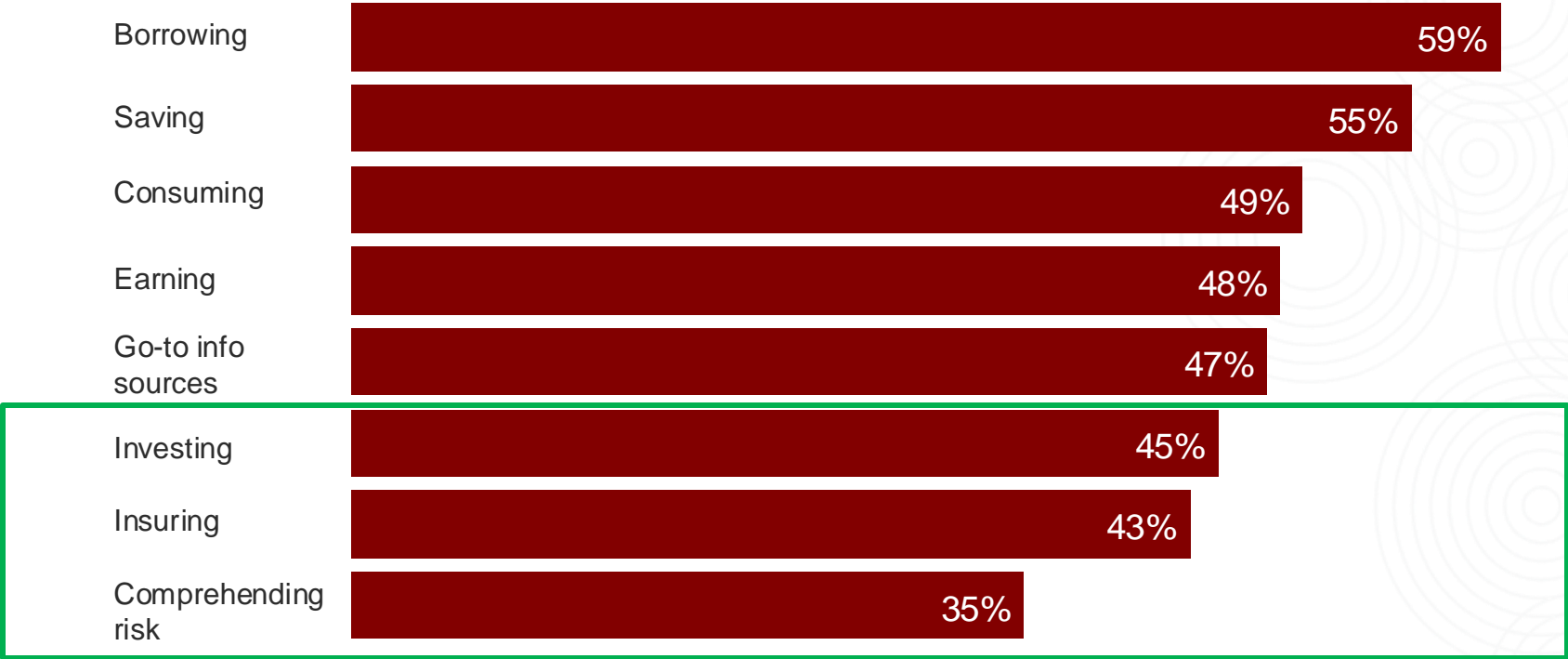


Distribution of correct answers to *P-Fin Index* questions



Source: TIAA Institute-GFLEC Personal Finance Index (2017-2024)

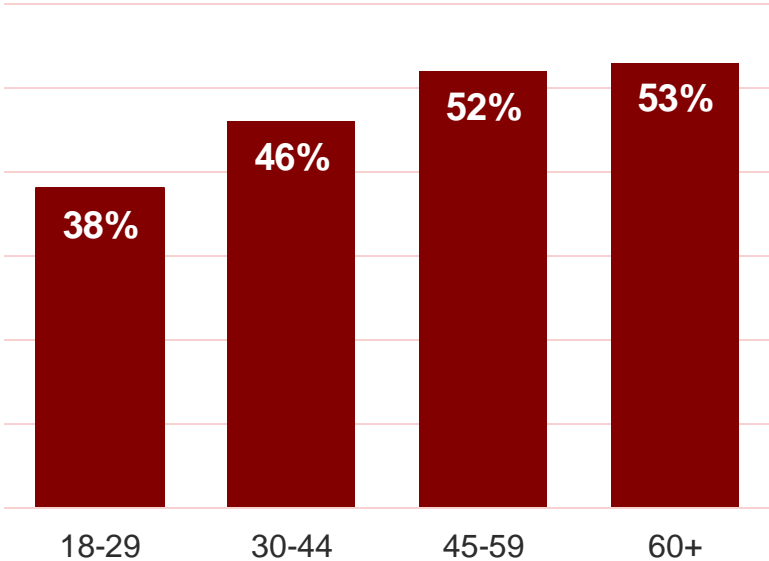
What do people know the most and the least



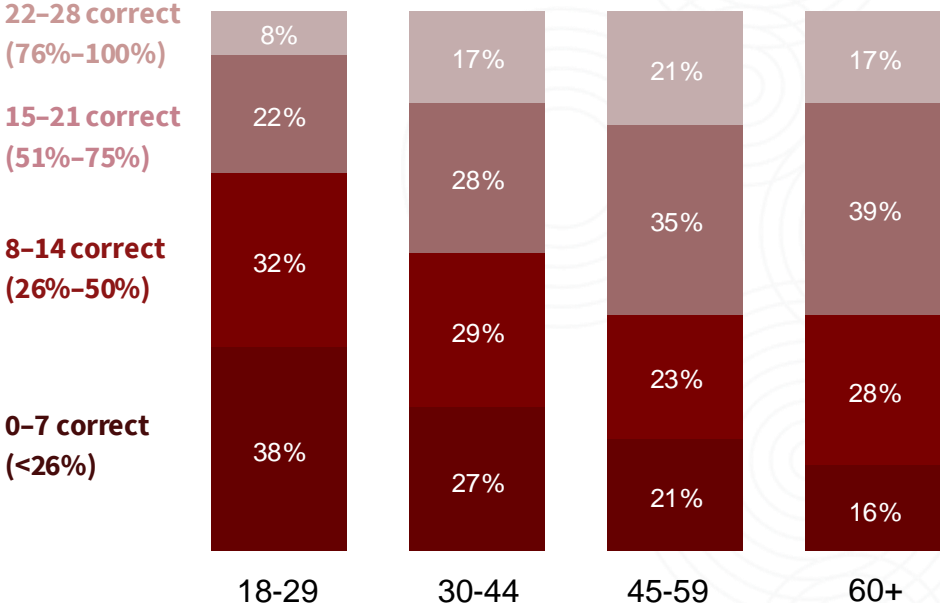
Source: TIAA Institute-GFLEC Personal Finance Index (2024).

Gaps in financial knowledge: Age groups/cohorts

% of P-Fin Index questions answered correctly



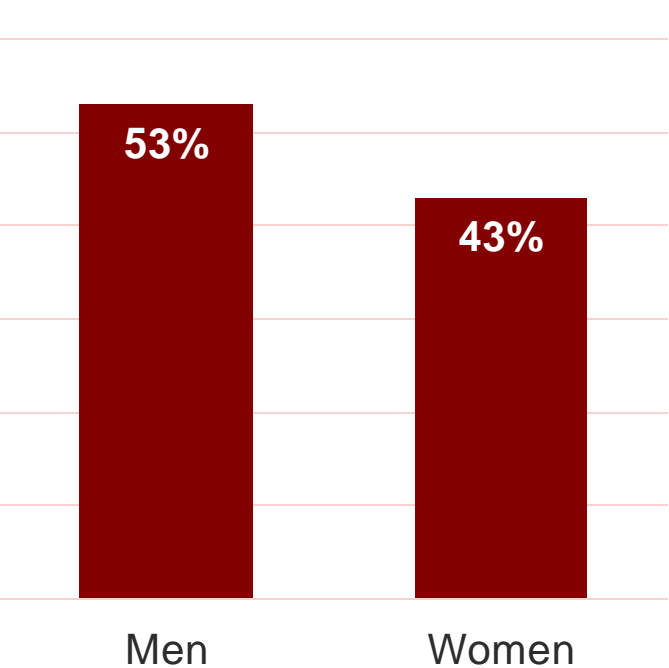
Distribution of correct answers to P-Fin Index questions



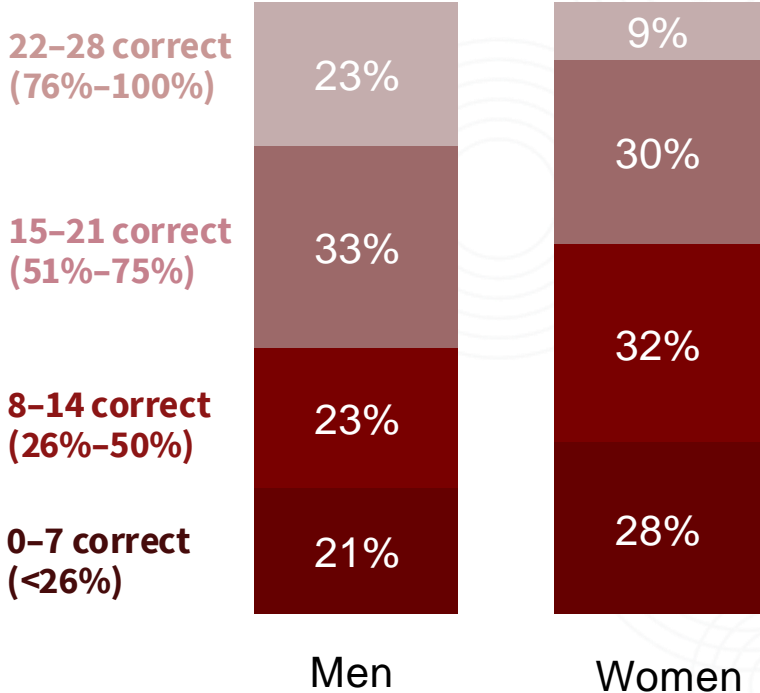
Source: TIAA Institute-GFLEC Personal Finance Index (2024)

Gaps in financial knowledge: Women and men

% of P-Fin Index questions answered correctly



Distribution of correct answers to P-Fin Index questions



Source: TIAA Institute-GFLEC Personal Finance Index (2024)

Financial literacy matters

Who is financially literate:

- is more likely to plan for retirement
- is more likely to save
- is less likely to be debt-constrained
- better prepared to cope with shocks

The findings in the P-Fin Index confirm the results in other studies using other measures of financial literacy.

Source: Lusardi and Mitchell (JEP 2023)



Measuring financial fragility (*Lusardi, Schneider and Tufano, BPEA, 2011*)

How **confident** are you that you could come up with **\$2000** if an unexpected need arose **within the next month**?

- I am certain I could come up with the full \$2,000.
- I could probably come up with \$2,000.
- **I could probably not come up with \$2,000.**
- **I am certain I could not come up with \$2,000.**
- Don't know.
- Prefer not to say.

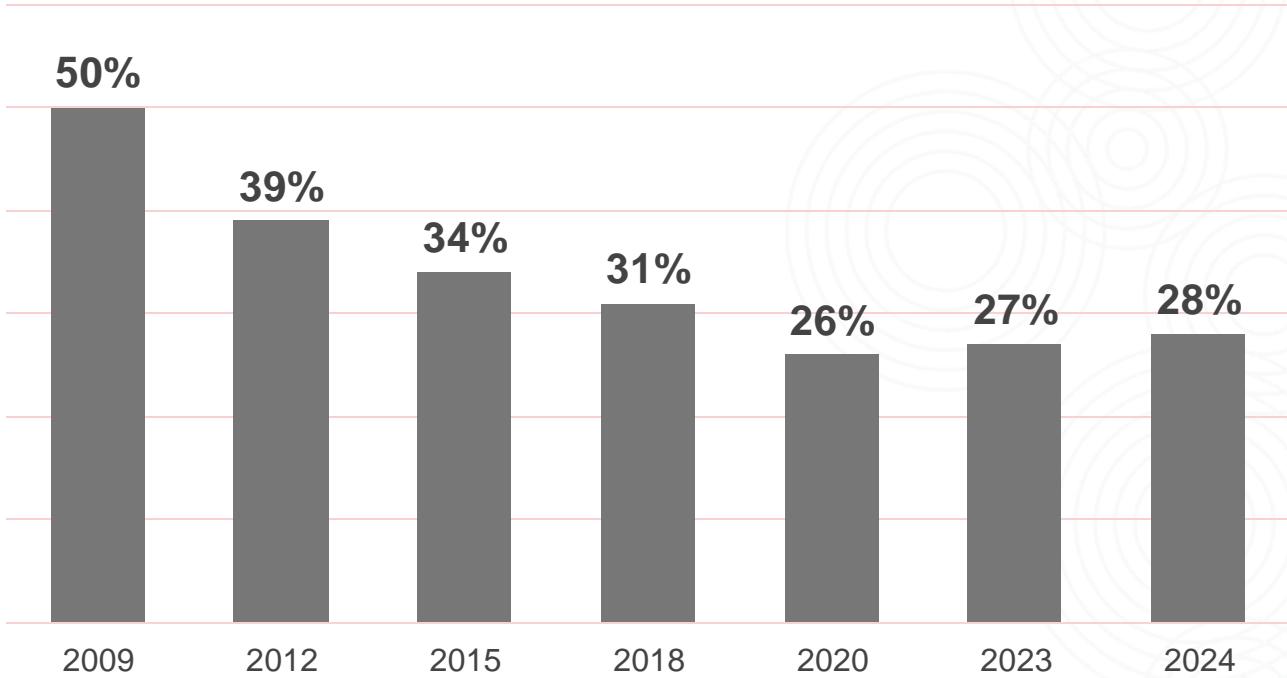


**Respondents are
classified as
financially fragile**

Financial fragility before and after the pandemic



Financial fragility over time



Source: 2009 TNS data; 2012, 2015 and 2018 NFCS data; 2020, 2023, 2024 P-Fin data.

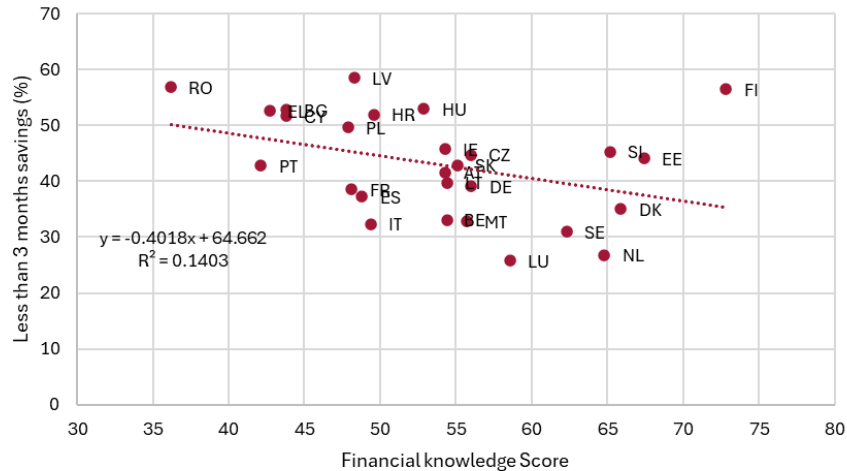
The relationship between financial resilience (being able to cope) and financial literacy

	Model 1 <i>Financial Resilience</i>	Model 2 <i>Financial Resilience</i>	Model 3 <i>Financial Resilience</i>
>50% of P-Fin questions correct	0.095*** (0.018)		
Total # of P-Fin questions correct		0.007*** (0.001)	
Was offered financial education			0.052*** (0.015)
Demographic Controls	Yes	Yes	Yes
Observations	3,687	3,687	3,687
R-squared	0.173	0.175	0.168

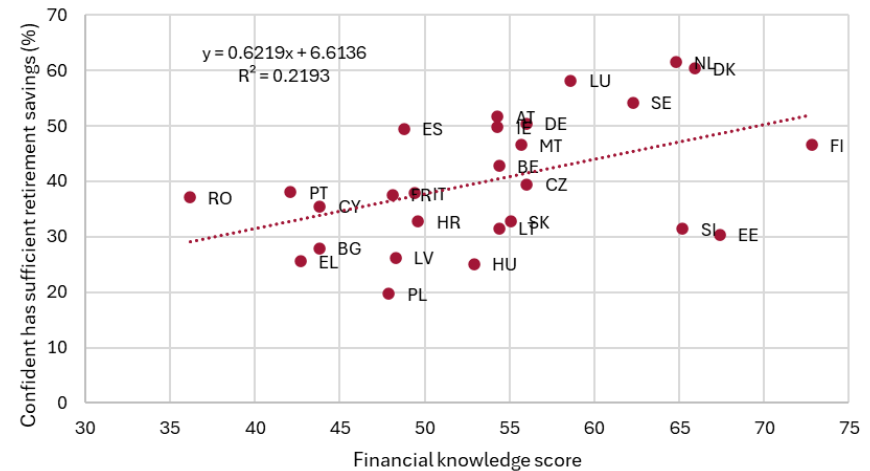
Findings from the Flash Eurobarometer

- Financial knowledge, financial fragility and pension security

(a) Financial fragility and financial knowledge



(b) Sufficient pension means and financial knowledge



Source: Bruegel based on European Commission Flash Eurobarometer 525 (2023). Notes: 5 questions asked to measure financial knowledge. We consider sufficient financial knowledge as at least 3 questions correctly answered.

Consumer Expectations Survey (CES)

- **Internet panel**; DE, FR, ES, IT, BE, NL; ~ 10,000 households; pilot started January 2020 (January 2021: +5 EA countries; 19,000 households)
- Sample: **PS** (via RD) & **NPS** (via existing online panels); sample weights: nationally representative
- Household **perceptions**, **expectations** and **behavior** (incl. consumption, saving/investing, borrowing)
- **Mixed-frequency modular approach** (background; monthly, quarterly, annual topical modules; special-purpose ad hoc surveys)
- For a description see: *Georgarakos and Kenny (JME, 2022)*; and *ECB Evaluation Report (OP, 2021)*
- https://www.ecb.europa.eu/stats/ecb_surveys/consumer_exp_survey/html/index.en.html

Latest results - August 2024

Inflation

Consumers' inflation expectations for the year ahead decreased.

[More on inflation](#)

Housing & credit

Consumers' home price growth expectations over the next 12 months increased.

[More on housing and credit](#)

Income & consumption

Consumers' expectations for their net income growth over the next 12 months increased.

[More on income and consumption](#)

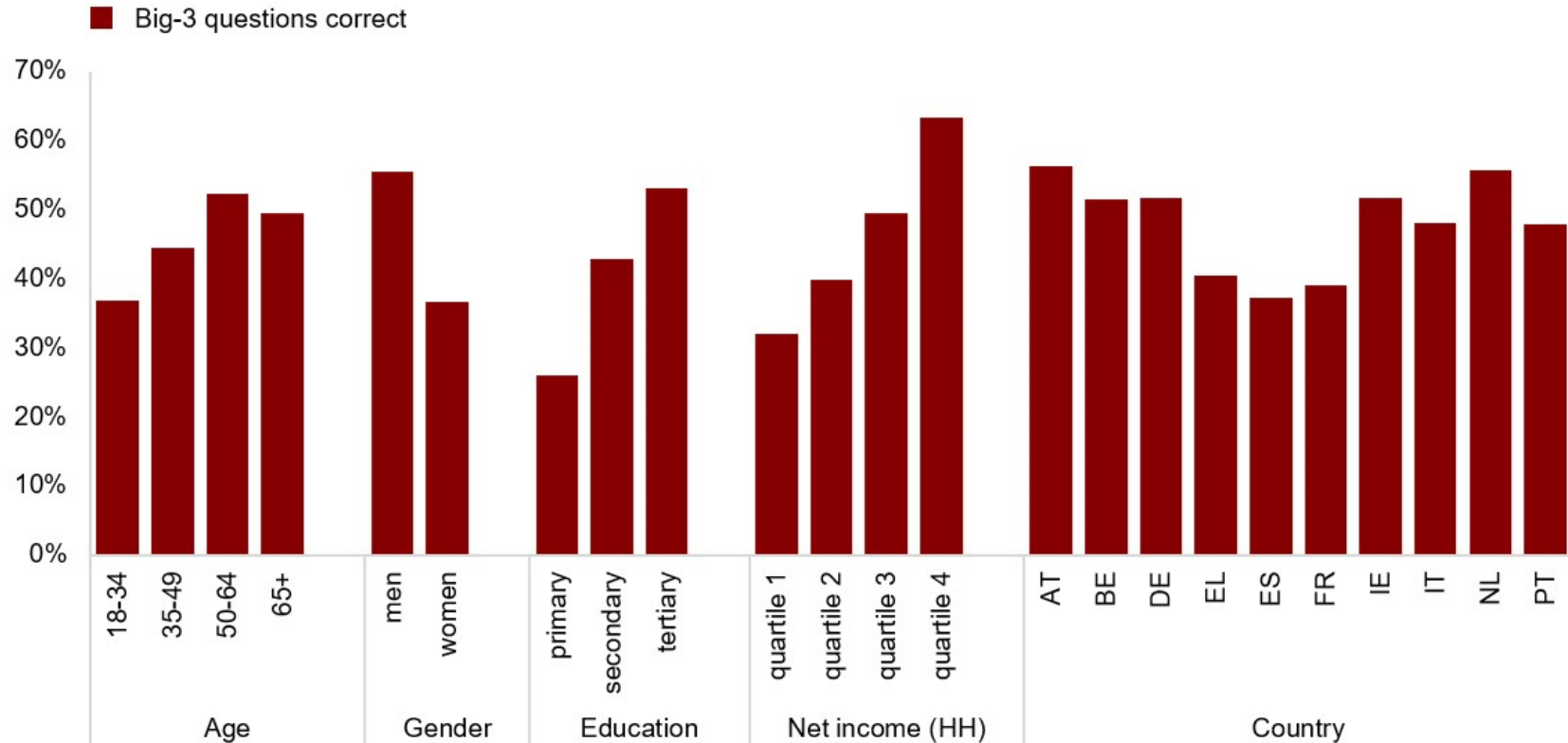
Labour & growth

Consumers' expectations for the unemployment rate over the next 12 months decreased.

[More on labour and growth](#)

Financial literacy – summary statistics

Share of consumers with high financial literacy
(percentage of consumers)



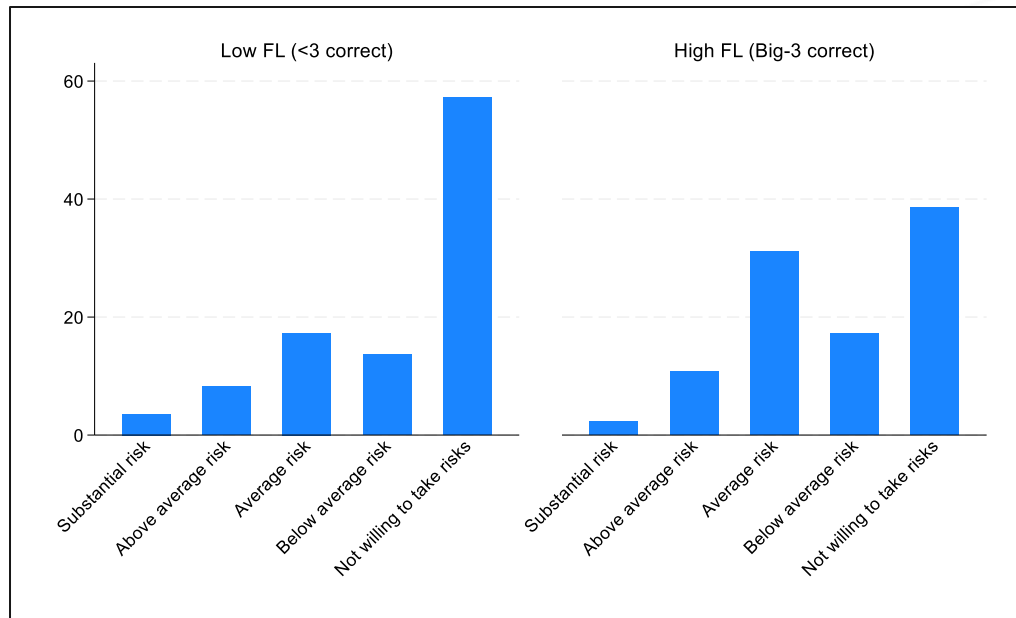
Saving for the future/investing



Risk taking behavior

High FL: more willing to take up (modest) risks

Willingness to take financial risk
(percentage of consumers, by literacy)

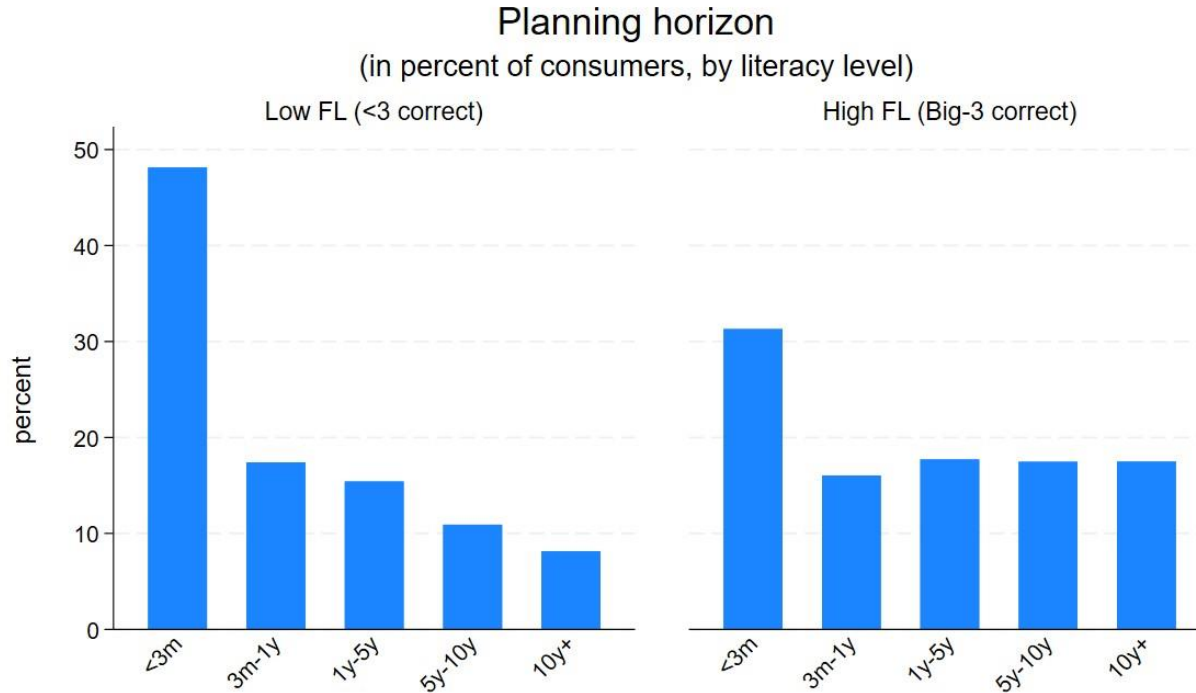


Source: ECB Consumer Expectations Survey, authors' calculations.

Notes: **Which of the following statements comes closest to the amount of financial risk you are willing to take when you save or make investments?** Weighted estimates. Pooled Nov. 2022 and Nov. 2023 data.

Investment planning horizon

- ❖ High FL: longer-run investment planning more likely



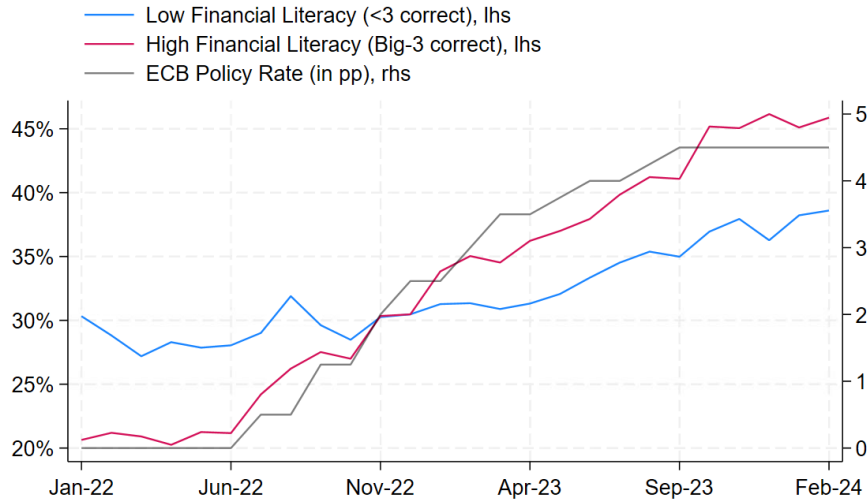
Source: ECB Consumer Expectations Survey. Authors' calculations.

Notes: **When making your savings and investment decisions, how far in the future do you, or does your household, typically plan?** Weighted estimates. Data is pooled from April 2020 to February 2024.

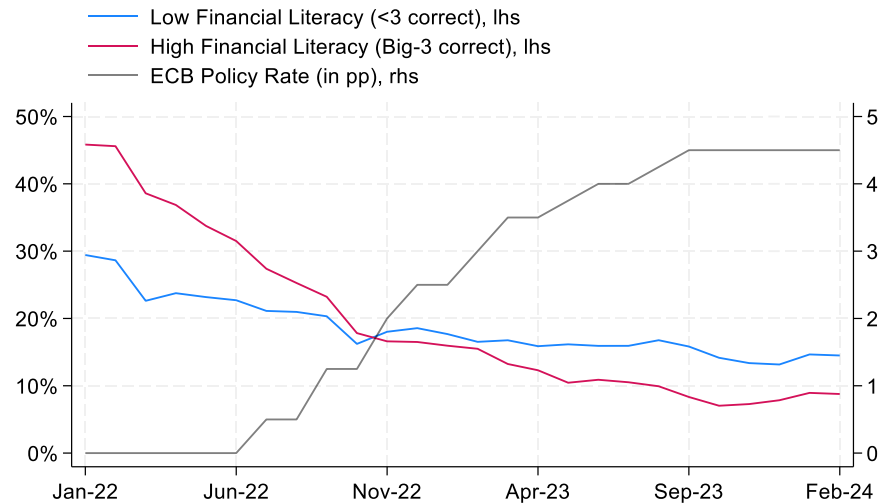
Good time to save and borrow

- ❖ High FL: better sense of good timing; more aligned with interest rates (IR) developments

Good time to **save** (yes)
(percentage of consumers, by literacy)



Good time to **borrow** (yes)
(percentage of consumers, by literacy)



Source: ECB Consumer Expectations Survey, latest data: Feb. 24. Authors' calculations.

Notes: Each month in the CES Consumers are asked “Generally speaking, do you think now is a good time or a bad time to ...?” (i) “Save money in savings accounts” (ii) “Borrow money from a bank” on a 5-point-scale from “very bad” to “very good”. Weighted estimates.

Stock market participation

❖ High FL: significantly higher stock market participation

	Stocks (direct)		Mutual funds / ETFs		Stocks (direct) or Mutual Funds /ETFs		Pension Products	
Mean (share of resp.)	0.22		0.24		0.33		0.23	
Big-3 (correct)	0.15***	0.15***	0.20***	0.20***	0.24***	0.24***	0.10***	0.10***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)	(0.006)	(0.006)
Country and wave dummies	X	X	X	X	X	X	X	X
Demographic controls		X		X		X		X
R-2	0.04	0.04	0.09	0.09	0.09	0.09	0.03	0.03
N	52,633	52,633	52,638	52,638	52,540	52,540	52,708	52,708

Source: ECB Consumer Expectations Survey, authors' calculations.

Notes: The table depicts marginal effects from a **linear probability model with ownership of the respective asset** as dependent variable. Demographic controls include *age, gender, income, education, household size, financial fragility indicator*, and all regressions include *country* and *wave* dummies. Weighted estimates. Pooled data from Nov. 2021, Nov. 2022 and Nov. 2023.

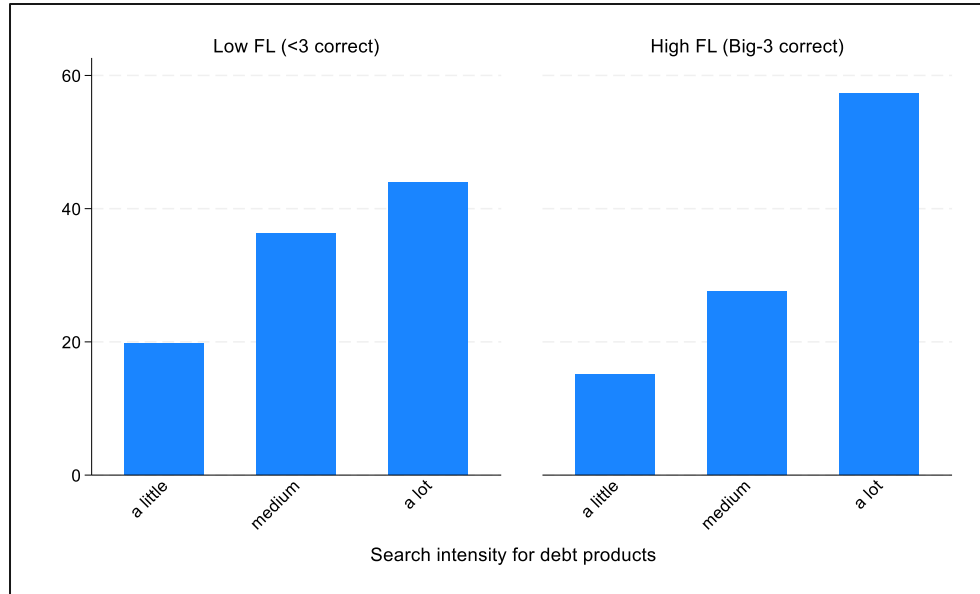
Debt management/financial stability



Shopping for best debt products

❖ High FL: more shopping for best debt products

Shopping around for debt products (in percent of consumers, by literacy)



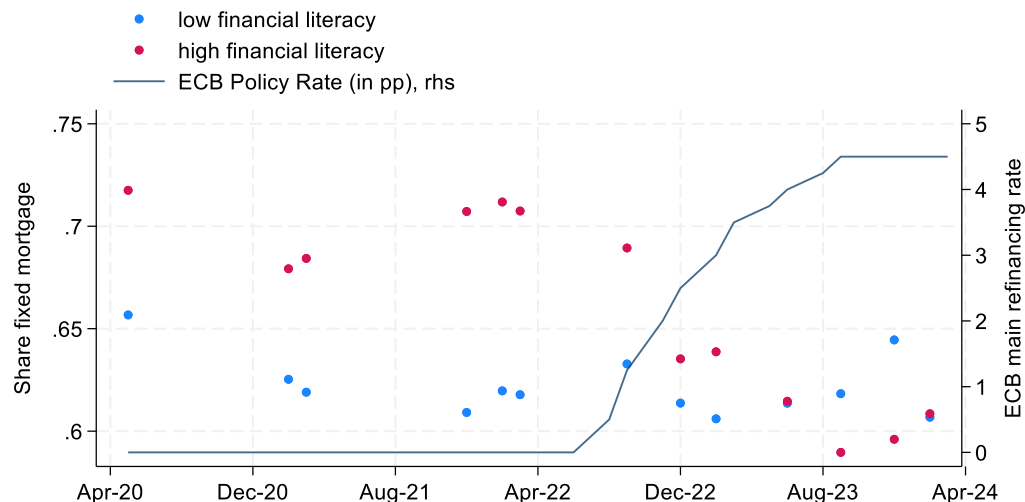
Source: ECB Consumer Expectations Survey, authors' calculations.

Notes: Consumers are asked **“When making major decisions about borrowing money or obtaining credit, some people search for the very best terms while others don’t. What best describes you and your household?”** on a 11-point-scale from 0 (no searching) to 10 (A great deal of searching). Answers are grouped to a little (0 to 3), medium (4 to 6) and a lot (7 to 10) of searching. Weighted estimates. Pooled Nov. 2022 and Nov. 2023 data.

FRMs vs ARMs across IR environments

❖ Low FL: favor FRMs in a high IR environment

Hypothetical mortgage type: fixed
(share of consumers, by literacy level)



	Fixed mortgage (yes/no)
Big 3 correct	0.08*** (0.008)
after July 22'	-0.00 (0.005)
Big 3 correct # after July 22'	-0.08*** (0.009)
R-2	0.02
N	173,727
Country dummies	Yes

Source: ECB Consumer Expectations Survey, latest data: Feb. 2024, authors' calculations.

Notes: On ad-hoc basis the CES asks consumers **“Suppose you have to take out a mortgage to finance the purchase of a house/apartment today. Which one of the following types would you choose?”** Respondents can choose from: **“An adjustable rate mortgage”**, **“A fixed rate mortgage”** or **“A mixed mortgage loan”** with short explainers on the types of mortgages. Weighted estimates. Data depicted is pooled from Belgium, Germany, Spain, France, Italy, and the Netherlands.

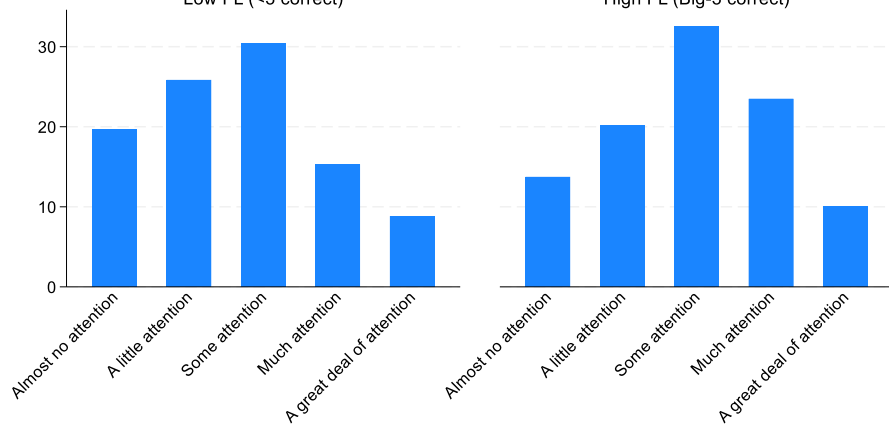
Consumer attention to interest rate developments

❖ Low FL: limited attention to IRs, even among ARM holders

Level of interest rate attention December 2023 | mortgage holder
(in percent of consumers, by literacy level)

Low FL (<3 correct)

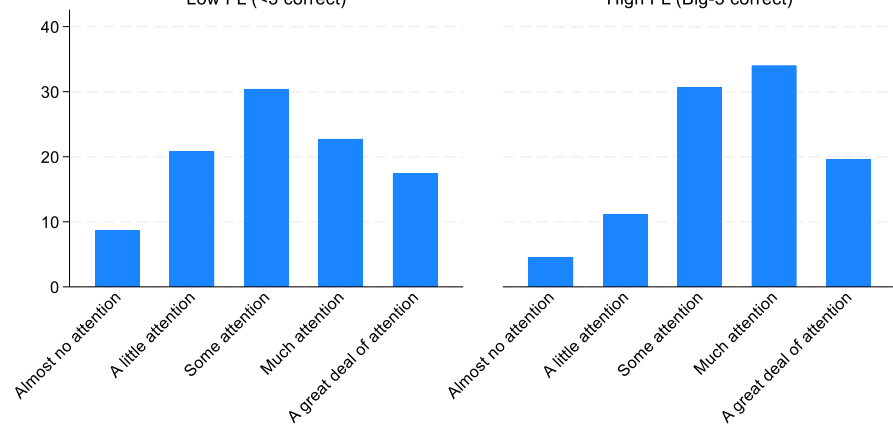
High FL (Big-3 correct)



Level of interest rate attention December 2023 | variable rate mortgage holder
(in percent of consumers, by literacy level)

Low FL (<3 correct)

High FL (Big-3 correct)



Source: ECB Consumer Expectations Survey, authors' calculations.

Notes: Consumers are asked: ***“Thinking about yourself, how much attention do you currently pay to interest rates in the country you currently live in?”***. Weighted estimates based on December 2023 data.

Debt and debt management

- ❖ High FL: less likely to have difficulty making payments on time

	Expected late payments							
	Rent		Mortgage		Loan		Utility bills	
Mean (share of resp.)	0.09		0.07		0.08		0.09	
Big-3 (correct)	-0.04*** (0.003)	-0.06*** (0.004)	-0.04*** (0.003)	-0.05*** (0.003)	-0.02*** (0.003)	-0.05*** (0.003)	-0.02*** (0.003)	-0.06*** (0.003)
Country and wave dummies	X	X	X	X	X	X	X	X
Demographic controls		X		X		X		X
R-2	0.06	0.02	0.05	0.03	0.06	0.03	0.10	0.04
N	113,402	113,402	105,857	105,857	110,042	110,042	190,683	190,683

Source: ECB Consumer Expectations Survey, authors' calculations.

Notes: Consumers are asked each quarter in the CES: ***“Looking ahead over the next 3 months, do you expect that your household is likely to have difficulty making any of the following payments on time? Rent/ mortgage/ other loans/ utility bills”***. The table depicts marginal effects from a linear probability model with expected late payments of the respective item as dependent variable. Demographic controls include age, gender, income, education, household size, financial fragility indicator, and all regressions include country and wave dummies. Weighted estimates. Pooled quarterly data from April 2020 to March 2024.

Financial fragility



Financial Fragility

- ❖ High FL: better access to liquidity and able to cope with emergencies

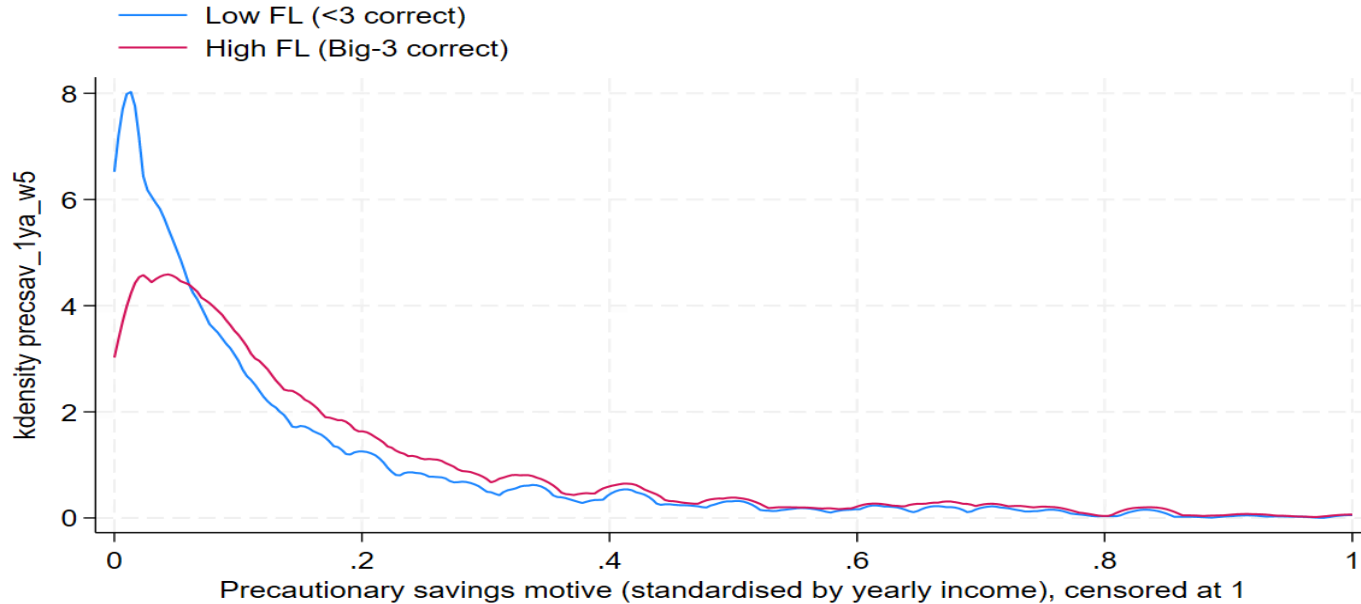
	Financially fragile	
Mean (share of resp.)		0.29
Big-3 (correct)	-0.19*** (0.006)	-0.11*** (0.006)
Country and wave dummies	X	X
Demographic controls		X
R-2	0.06	0.14
N	774,422	669,982

Source: ECB Consumer Expectations Survey, authors' calculations.

Notes: Each month consumers are asked in the CES: ***“Please think about your available financial resources, including access to credit, savings, loans from relatives or friends, etc. Suppose that you had to make an unexpected payment equal to one month of your household income. Would you have sufficient financial resources to pay for the entire amount?”*** The table depicts marginal effects from a linear probability model with being financially fragile as dependent variable. Demographic controls include *age, gender, income, education, household size*, and all regressions include *country* and *wave* dummies. Weighted estimates. Pooled monthly data from April 2020 to March 2024.

Precautionary Savings

- ❖ High FL: would put aside a higher fraction of their income to deal with emergencies



Source: ECB Consumer Expectations Survey, authors' calculations.

Notes: Consumers are asked every quarter in the CES: ***“Households save for different reasons. One reason is to be ready for unexpected events, such as job loss, big repairs, or illness. What do you think would be the total amount of savings that your household needs to have set aside to deal with unexpected life events you might experience over the next 12 months?”*** Weighted estimates. Data is pooled from Apr. 2021 to January 2024.

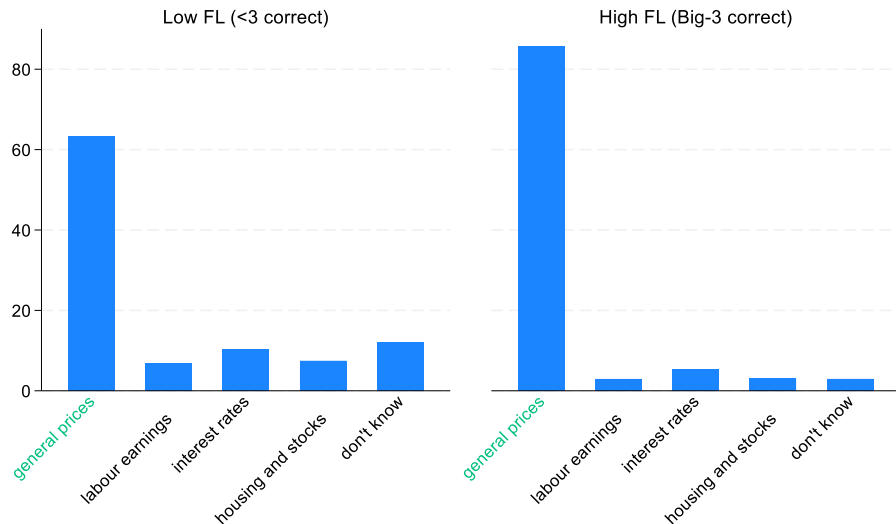
Effectiveness of CB communication



Knowledge about inflation and CB objectives

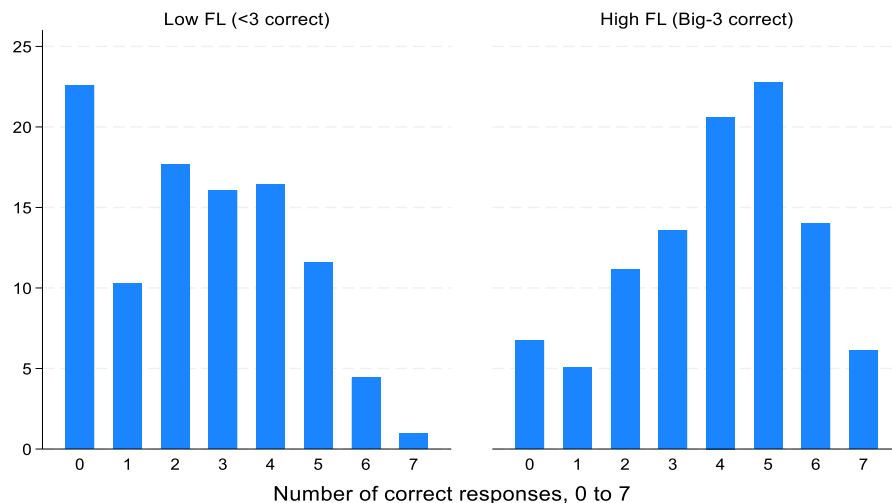
- ❖ High FL: more knowledgeable about 'inflation' and ECB objectives

Inflation definition
(percentage of consumers, by literacy)



Source: ECB Consumer Expectations Survey. Authors' calculations.
Notes: Weighted estimates. Pooled data from Aug. 2022 and Aug. 2023.

ECB Knowledge
(percentage of consumers, by literacy)

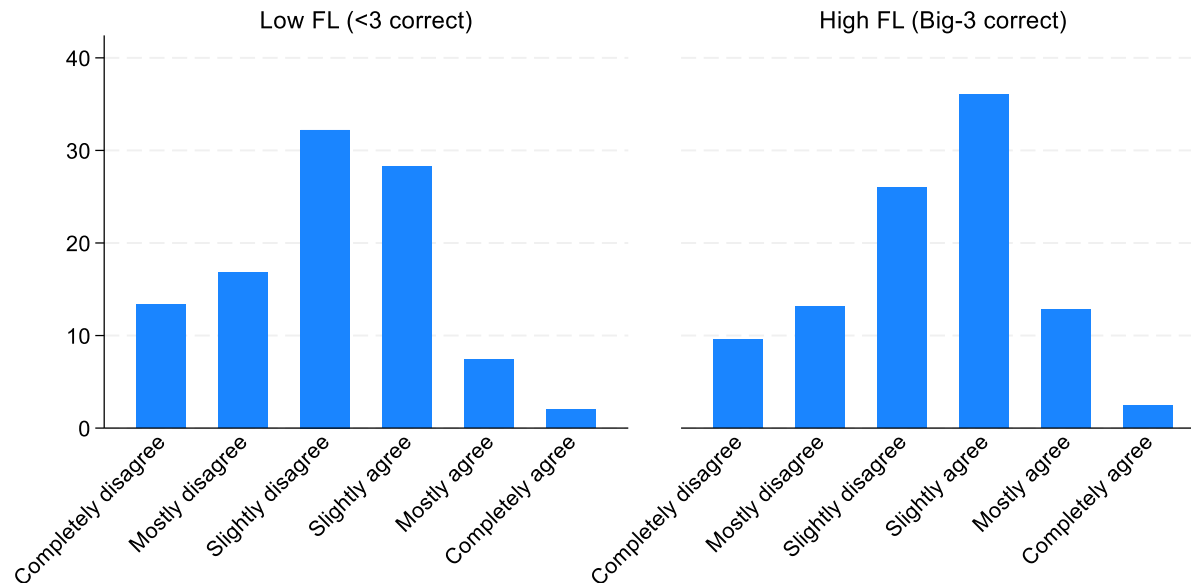


Seven questions about the main objectives/tasks of the ECB
Source: ECB Consumer Expectations Survey. Authors' calculations

Effectiveness of CB policies

- ❖ High FL: more likely to understand CB policies

The ECB policy decisions to raise interest rates ensure overall price stability
(percentage of consumers, by literacy)

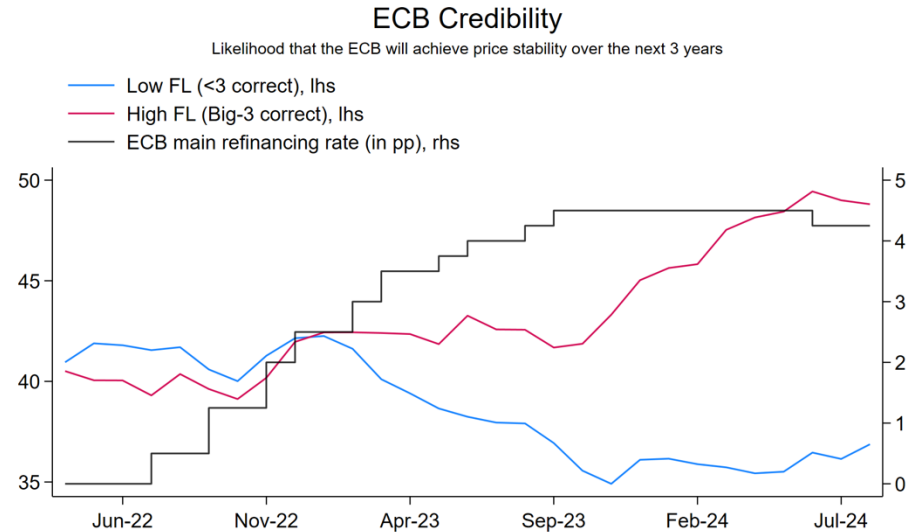
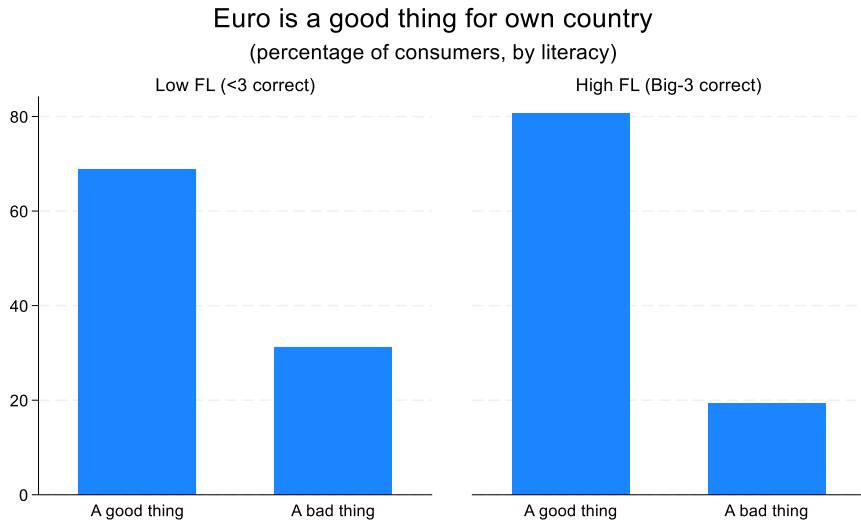


Source: ECB Consumer Expectations Survey. Authors' calculations.

Notes: In March 2023 consumers were asked **how much they agree or disagree with the following statement “The ECB policy decisions to raise interest rates ensure overall price stability.”**. Weighted estimates.

Trust in euro and the ECB

❖ High FL: higher support for the euro/ higher ECB credibility

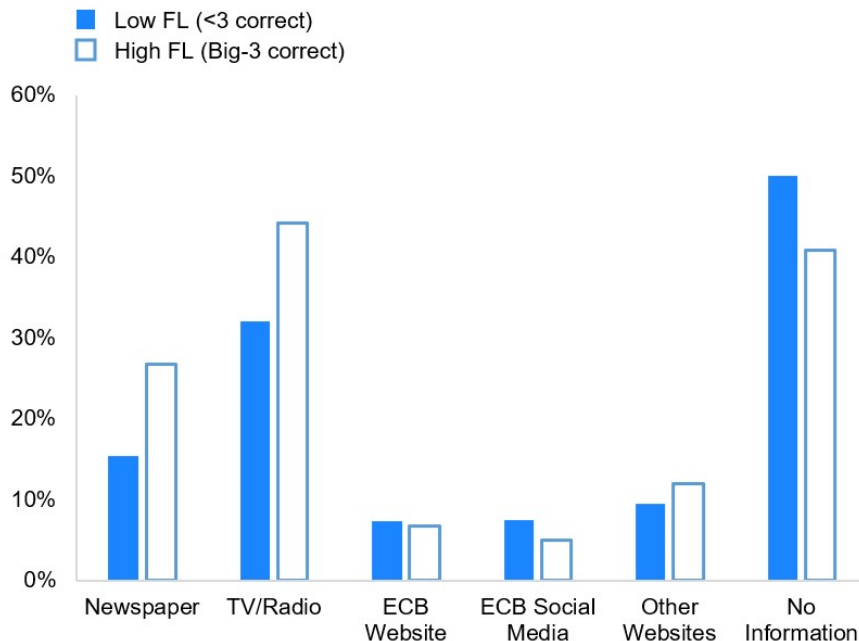


Source: ECB Consumer Expectations Survey. Left panel: **“Generally speaking, do you think having the euro is a good or a bad thing for the country you currently live in? (i) A good thing (ii) A bad thing (iii) Can’t decide (iv) Don’t Know”**; Right panel: **“How likely do you think it is that the European Central Bank (ECB) will maintain price stability in the euro area economy over the next 3 years?”** (slider 0 to 100)

Information about the ECB

- ❖ General public hard to reach, but **high FL more likely to receive news about the ECB, mainly via traditional channels**

Information about the ECB: channels by literacy (percentage of respondents, by literacy)



Source: ECB Consumer Expectations Survey (CES).

Notes: **In the past month, have you seen or heard information about the European Central Bank (ECB) from any of the following sources?** Apart from “No info”, all other options are not mutually exclusive, leading to a total sum higher than 100% of the respondents. Weighted estimates.

What we have learned

- Need to improve levels of financial literacy
 - Levels of knowledge are critically low
 - How do we communicate?
- Gaps across demographic subpopulations
 - One size does not fit all
- Increasing financial wellbeing
 - Financial knowledge matters for how people make decisions



From research to policy and programs



Personal finance courses at Stanford University

- When the course first opened, 362 students signed up. It became one of the most popular courses in Economics
- This academic year, we taught 3 courses on Personal Finance targeting different students, including during the summer term
- We have a Personal Finance Lab devoted to peer learning, and a monthly Financial Literacy Colloquia



Our annual Teaching Personal Finance Conference

Stanford | Institute for Economic
Policy Research (SIEPR)

Stanford | Department of Economics
SCHOOL OF HUMANITIES AND SCIENCES

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Initiative for Financial Decision-Making

Collaboration among:

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Policy Research (SIEPR)

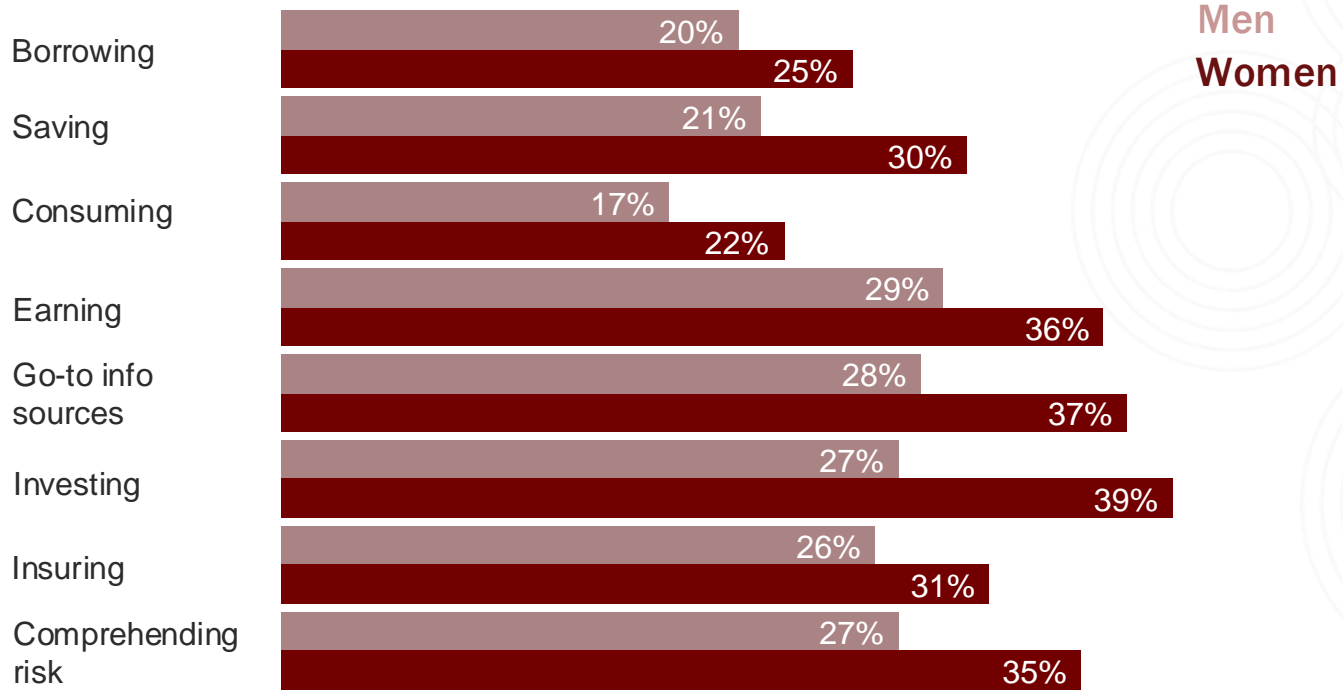
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**An initiative in which research, education, technology,
and policy come together**

Gender gap in answering “Do not know”

% of P-Fin questions answered “Don’t know”



Findings from an experiment using Dutch Central Bank Data

Fearless Woman: Financial Literacy and Stock Market Participation

Tabea Bucher-Koenen (ZEW, U of Mannheim)
Rob Alessie (U of Groningen)
Annamaria Lusardi (Stanford University)
Maarten van Rooij (Dutch Central Bank and ECB)

Targeting women

- There is a gender difference in financial literacy in most countries around the world
- Women are a large part of the population
- Potential spill over effects from women to other groups: children, adult, their communities

Closing remarks

- Low financial literacy consumers are less likely to use financial instruments in a way that can help their personal finances
- They also react less and understand less monetary policy interventions:
Low financial literacy can extend to the macro-economy
- We need to add financial literacy data to the national statistics as it can be an important predictor of variables we care about

Policy implications

Promoting financial literacy can benefit central banks because:

- It is linked to long run savings and participation in financial markets
- It contributes to less costly debt managements
- It is linked to being better able to cope with shocks
- It helps to understand the objective and policies of central banks and to gain trust

Financial literacy: The water in an eco-system

We need to teach and provide access to knowledge and skills so that people can be more financially resilient and financially secure. **Financial literacy is like water in an eco-system, it is needed to grow and flourish.**



For a summary: Paper describing the research in the past 20 years

Annamaria Lusardi and Olivia S. Mitchell

Journal of Economic Perspectives

Fall 2023

The Importance of Financial Literacy: Opening a New Field

Annamaria Lusardi and Olivia S. Mitchell

People face complex financial decisions with potentially long-lasting consequences at all stages of life. As young people grow into adulthood, they make decisions about loans for college tuition, cars, and houses, along with how to manage credit cards, health and other kinds of insurance, and living within a budget. The shift from defined benefit to defined contribution retirement plans implies that ordinary people must now shoulder decisions about saving, investing, and more. Older people face decisions about how to manage risks and costs of aging, as well as drawing down their retirement assets. These decisions have only become more complex with the advent of new financial products (which, with the help of technology, one can access with a click), novel ways to make payments (“buy now, pay later”), risky instruments such as crypto assets, and most recently the rise of inflation. According to Google Trends, searches for how to budget or save for retirement have increased fourfold since 2004.

For these reasons and others, *financial literacy*, by which we mean people’s knowledge of and ability to use fundamental financial concepts in their economic decision-making, matters and is more important than ever. The fact that so many people lack financial knowledge not only limits their ability to utilize their resources to the fullest, but also contributes to macroeconomic problems. Recent economic crises related to the subprime mortgage debacle and the COVID-19 pandemic

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Thank you!

If you have any questions, please
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