Financial Literacy and Personal Finance: An Overview

Annamaria Lusardi
Stanford University

Boot Camp
June 23, 2025

Welcome to the boot camp 2025!

- This is the second boot camp: The first was held in Hamburg, Germany, in 2023
- We plan to have a boot camp each year
- Thank you to the Joachim Herz Stiftung and the Initiative for Financial Decision-Making (IFDM) for supporting this boot camp

Initiative for Financial Decision-Making (IFDM)

Collaboration between:

Stanford | Institute for Economic Policy Research (SIEPR)

STANFORD GRADUATE SCHOOL OF BUSINESS

Stanford | Department of Economics
SCHOOL OF HUMANITIES AND SCIENCES

An initiative in which education, technology, policy, and research come together to transform personal finance education

Why a boot camp

- Grow the next generation of researchers who will shape the field and also teach this topic
- Share and generate new ideas
- We want to move the field forward
- Create a support system

Before we get started

- Let’s talk about this new field
- Opportunities for research and researchers
- Teaching and influencing policy

Session 1: Introduction to financial literacy and personal finance

Financial literacy is officially a research field, JEL code: G53

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Resources

- Data Sources
- For Students
- For Educators
- Online Seminars
- Meetings & Conferences
- *JEL* Codes Guide
- Funding & Grants

JEL Classification Codes Guide

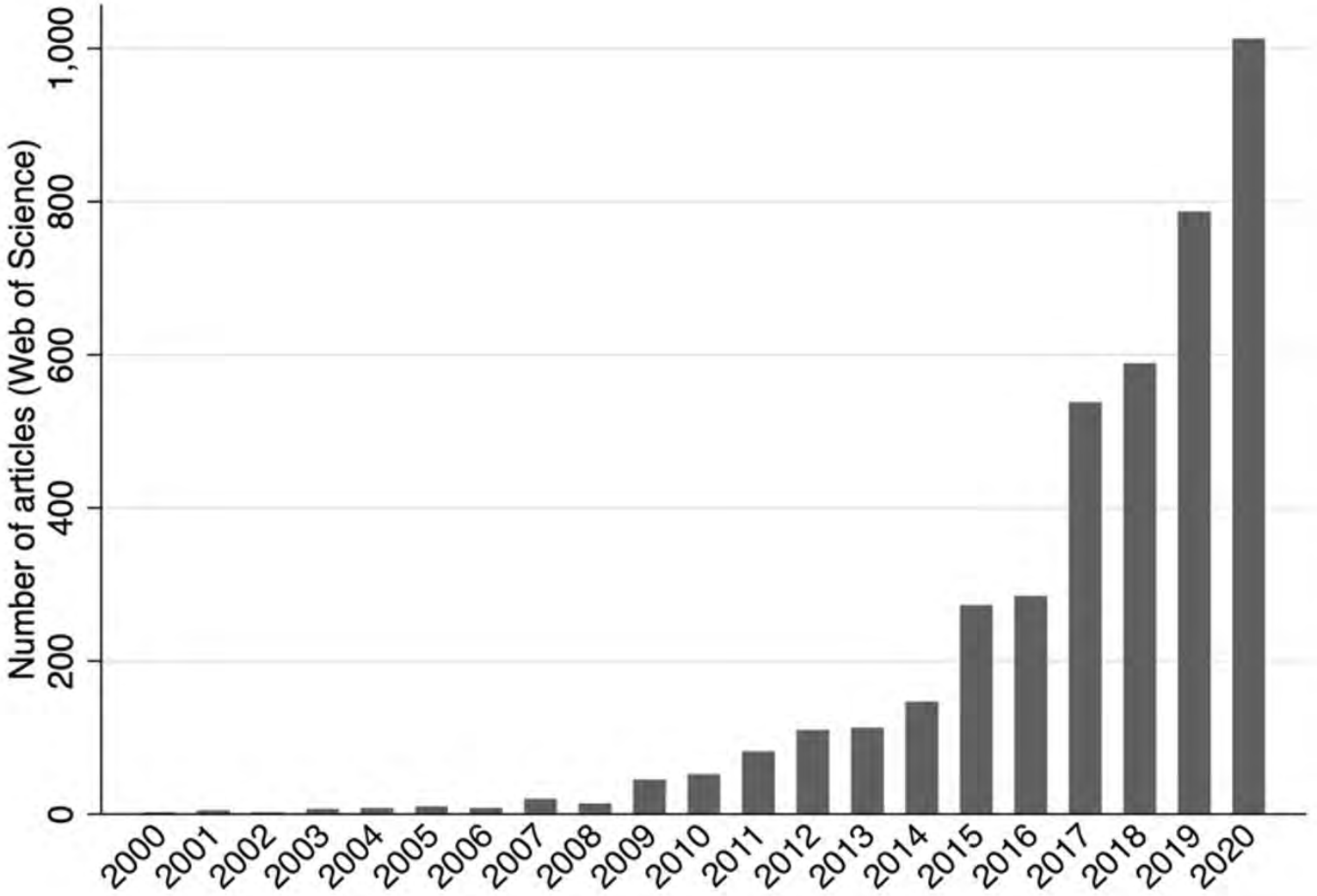
The guide provides JEL Code application guidelines, keywords, and examples of items within each classification.

The "JEL" classification system originated with the Journal of Economic Literature and is a standard method of classifying scholarly literature in the field of economics. It is used in many of the AEA's published research materials.

Use the guide to gain insight on how JEL Codes are used to classify articles, dissertations, books, book reviews, and working papers. You will also find it is helpful when adding classification codes to your own work.

G53 Financial Literacy

Numbers of articles on ‘financial literacy’ per year in the Web of Science have grown exponentially



Source: Kaiser et al, JFE (2022)

A meta-analysis of the existing work

Journal of Financial Economics
Available online 3 October 2021
In Press, Corrected Proof

Financial education affects financial knowledge and downstream behaviors

Tim Kaiser, Annamaria Lusardi, Lukas Menkhoff, Carly Urban

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https://doi.org/10.1016/j.jfineco.2021.09.022

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Abstract

We study the rapidly growing literature on the causal effects of financial education programs in a meta-analysis of 76 randomized experiments with a total sample size of over 160,000 individuals. Many of these experiments are published in top economics and finance journals. The evidence shows that financial education programs have, on average, positive causal treatment effects on financial knowledge and downstream financial behaviors. Treatment effects are economically meaningful in size, similar to those realized by educational interventions in other domains, and robust to accounting for publication bias in the literature. We also discuss the cost-effectiveness of financial education interventions.

We had to resort to a meta-analysis to overview the work done in this field

Useful method also to be impartial

An academic journal dedicated to financial literacy

First issue in 2023

Three papers have already gotten awards/special recognition

We just introduced briefs and reports to be open to more work, including policy work

The G53 Network

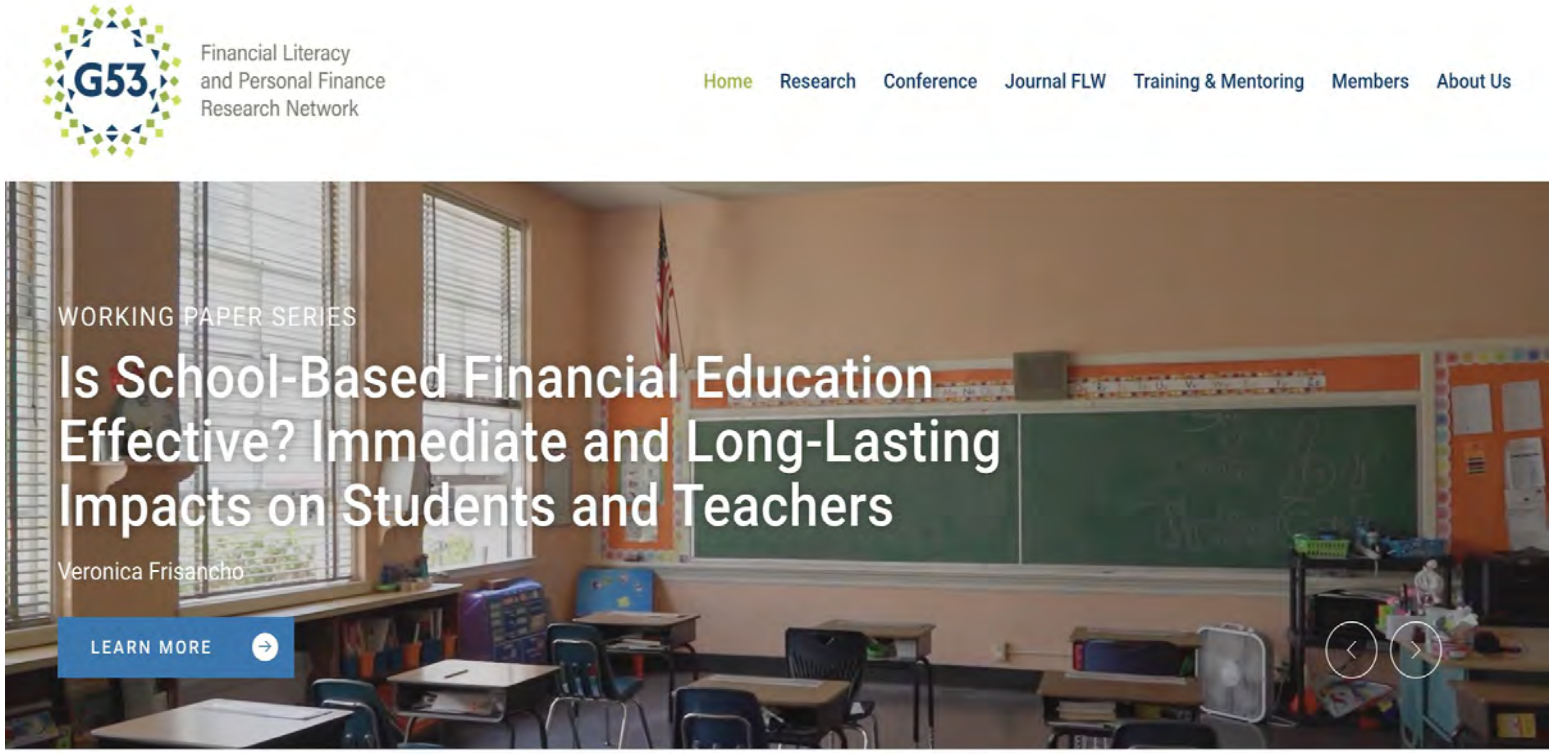
The G53 Network, modelled after the NBER, comprises a group of researchers from all over the world with a track record of research excellence and promoting financial literacy and personal finance.

G53 Financial Literacy and Personal Finance Research Network

Discover more here

Our members are appointed as Research Fellows or Research Associates, depending on their seniority in the field.

A network dedicated to financial literacy and personal finance



- Working papers series
- Monthly brown bag lunch presentations
- Conferences

Teaching personal finance in college/university

- Personal Finance courses for undergraduate and graduate students at the George Washington University since **2012**
- A lot of applications
- Many programs for students, including more recently a short course for graduating seniors

Introduction to Financial Decision-Making: Econ 43

- When the course first opened in 2020 at Stanford, 362 people signed up. It is currently the third most popular course at Stanford
- Last academic year, we taught 3 courses on Personal Finance targeting different students, including during the summer term
- I am teaching this summer again

Source: 2021 NFCS

Other programs at Stanford University, part of IFDM

- We hold a monthly Financial Literacy Colloquia series
- We have a Personal Finance Lab devoted to peer learning and run by students
- We have :
- (1) an annual research conference: Financial Education Symposium
- (2) a teaching personal finance conference
- **We offer short visits**

Financial Education Symposium (held in April) – 2 sessions for young scholars and research prizes

Stanford Financial Education Symposium

APRIL 10-11 2025

Stanford Graduate School of Business

PROGRAM

Stanford Graduate School of Business
Vidalakis Dining Hall, Schwab Residential Center
680 Jane Stanford Way, Stanford, CA 94305

THURSDAY, APRIL 10, 2025

9:00—9:45 a.m.	**Breakfast and Registration**
9:45—10:00 a.m.	**Welcome Remarks and Updates on the Initiative for Financial Decision-Making** **Joshua Caraballo,** *National Endowment for Financial Education (NEFE)* **Annamaria Lusardi,** *Initiative for Financial Decision-Making (IFDM), Stanford University*
10:00—11:00 a.m.	**Keynote Address** **Session Chair: Annamaria Lusardi,** *Initiative for Financial Decision-Making (IFDM), Stanford University* **Hanno Lustig,** *Stanford Graduate School of Business* | Financial and Total Wealth Inequality with Declining Interest Rates

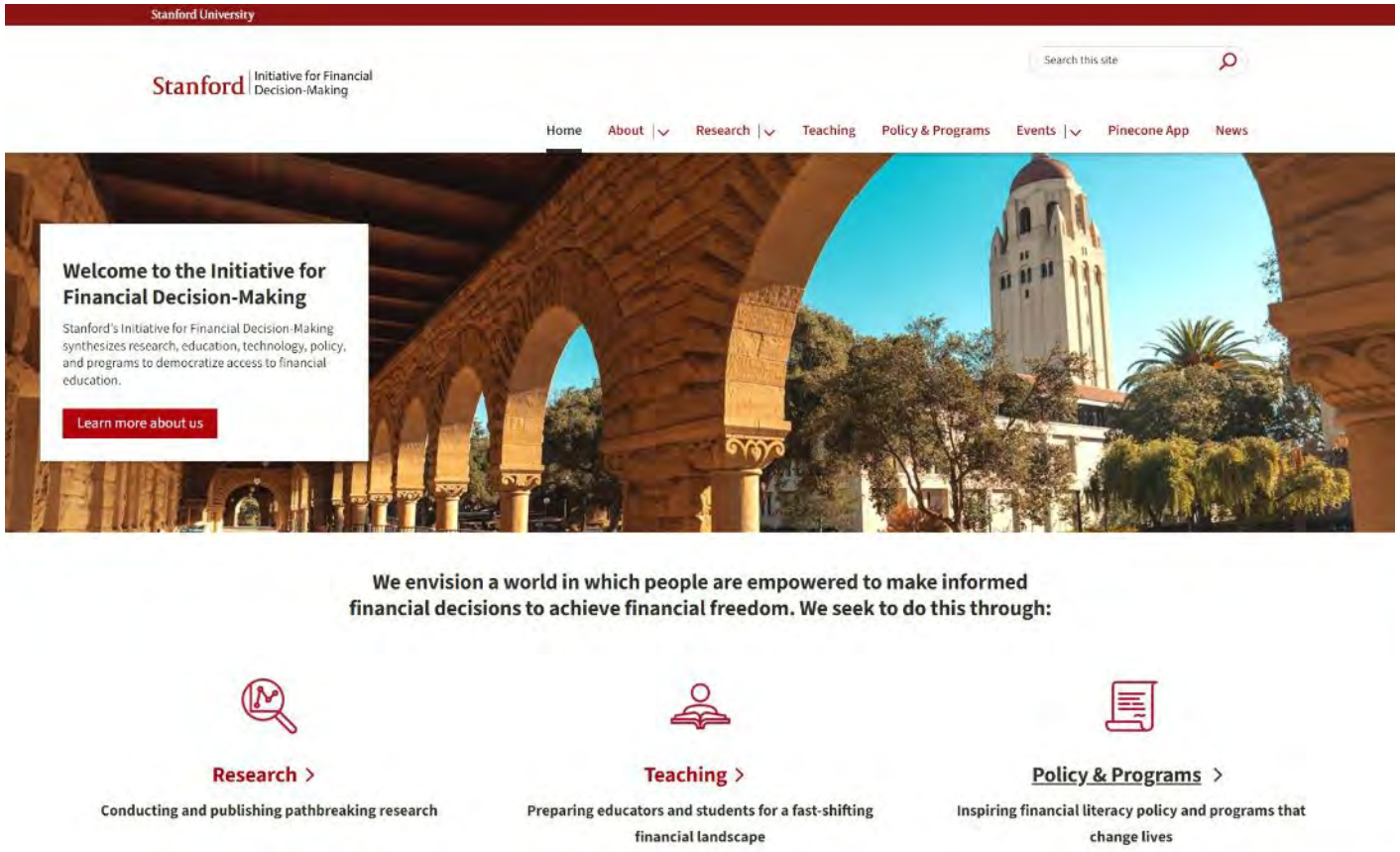
FRIDAY, APRIL 11, 2025

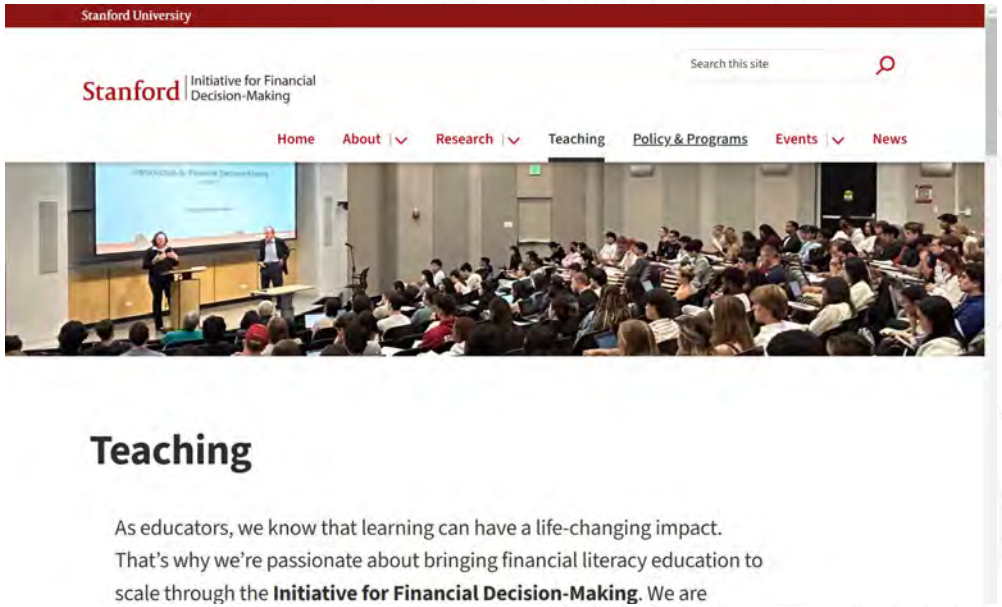
8:00—9:00 a.m.	**Breakfast**
9:00—9:05 a.m.	**Welcome Remarks**
9:05—10:05 a.m.	**Fireside Chat on the Key Lessons from the California Wildfires for Policymakers, Insurers, and Homeowners** **Presenter: Benjamin Keys,** *Wharton School of the University of Pennsylvania* **Neale Mahoney,** *Dept. of Economics, Stanford University; Stanford Institute for Economic Policy Research (SIEPR)* **John Shoven,** *Dept. of Economics, Stanford University; Stanford Institute for Economic Policy Research (SIEPR)*
10:05—10:20 a.m.	**Break**
10:20—11:20 a.m.	**Session 5** **Session Chair: Jason Seligman,** *Investment Company Institute* **Alexander Michaelides,** *Imperial College London* | Trust and Investment Loss: Evidence from UK Financial Corporate Failures **Maya Haran Rosen,** *Hebrew University of Jerusalem and the Bank of Israel* | Trust, Financial Literacy, and Financial Behavior Driving Retirement Security
11:20 a.m.—12:20 p.m.	**Session 6** **Session Chair: Andrew Elgin,** *U.S. Military Academy at West Point* **Guglielmo Briscese,** *University of Chicago* | The Role of Parental Beliefs, Financial Literacy, and Public Policies in Financing Higher Education: An Experimental Study

Teaching Personal Finance Conference (now in its 4h edition), held in the Fall (September/October)

For more information, please visit our webpage

https://ifdm.stanford.edu/





Stanford | Initiative for Financial Decision-Making

Policy: National strategies for financial literacy

More than 80 countries have done or are doing a national strategy for financial literacy

Main topics I will cover in my lectures

- Measuring financial literacy
- Surveys and data to study financial literacy
- Assessing the impact of financial literacy on behavior
- Using the data, findings, and research for teaching personal finance and influence policy

Main topics we will address in the boot camp

- How can we explain some of the findings in the data?
  - Why is there a gender difference in financial literacy?

- Does financial literacy affect behavior and why?
- What are the effects of financial education?
  - Important to address causality: RCTs and field work

- Theoretical frameworks for financial literacy?

Main topics we will address in the boot camp (cont.)

- Looking at new trends and findings
- Implications for policy and programs

Overall: How can we push this field forward?

What is unique about this field

- Forward looking: financial literacy is about the future
- Relevance: Financial literacy is in the news every day
- So much to do
- Can lead to some exciting interdisciplinary work with Technology, Accounting, Law, Psychology, Education, to name a few. At Stanford, we have collaborations across the entire campus

Expectations

- Increased curiosity about the topic
- Come up with a research question and a 2-page draft of a project
- Make new friends and potential collaborators
- Consider teaching personal finance
- Stay in touch

Session 2: Measurement of financial literacy – part I

How it started

Motivated by changes in the economic system:

- Changes in the pension system: people are in charge of their own pension

This is why Olivia Mitchell and I started working on financial literacy: People have to plan for their retirement, do they know how to do it?

Many more reasons to work on financial literacy

Not just changes in the pension system:

- Student loans: How to finance education
- Complexity of financial instruments, including new ones (crypto assets)
- Easy access to credit, buy now pay later
- Fintech, buy with a click
- Increase in risk, including climate problems (ex: CA fires) and wars

The importance of measurement

- Critically important to measure to be able to understand a topic
  - Kuznets set up national income accounting, which was instrument for measuring GNP
- No measure on financial literacy existed that could be linked to other variables
- The field did not exist

Measuring financial literacy: The Big Three

- Olivia Mitchell and I were able to add three questions in a module in the Health and Retirement Study (HRS) in 2004
- We considered the fundamental concepts at the basis of financial decision-making
- This small number made it possible to have these questions in many national surveys around the world

Measuring financial literacy: The ABCs

These are the questions I designed jointly with Olivia Mitchell.

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?"

- [x] More than $102
- [ ] Exactly $102
- [ ] Less than $102
- [ ] Don't know
- [ ] Refuse to answer

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…"

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

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."

- [ ] True
- [x] False
- [ ] Don't know
- [ ] Refuse to answer

How much do Americans know?

(Lusardi and Mitchell, Journal of Pension Economics and Finance (JPEF), 2011)

Distribution of responses across the U.S. population
(2009 National Financial Capability Study)

	Responses			
	Correct	Incorrect	DK	Refuse
Interest rate	64.9%	20.5%	13.5%	1%
Inflation	64.3%	20.2%	14.2%	1.3%
Risk diversif.	51.8%	13.3%	33.7%	1.2%

NB: Only about 1/3 correctly answer all 3 questions. About 1/3 do not know about risk diversification.

Main findings

- We cannot take financial literacy for granted even in the country with the most developed financial markets
  - High proportion of incorrect and DK answers even in simple questions
- Risk diversification is what people know the least
- High proportion of “do not know” answers.

Added these questions to national surveys in other countries

- How do countries compare?
- Are there many similarities?
- What do people know the most and least?

We learned a lot from international comparisons. When I moved to the George Washington University, I founded GFLEC (Global Financial Literacy Excellence Center)

How much do Germans know?

(Bucher-Koenen & Lusardi, JPEF 2011)

Distribution of responses across the German population (2009 SAVE)

	Responses		
	Correct	*Incorrect*	*DK*
Interest rate	82.4%	6.7%	11%
Inflation	78.4%	4.6%	17%
Risk diversif.	61.8%	5.9%	32.3%

NB: About half (53.2%) correctly answer all 3 questions. About 1/3 do not know about risk

How much do Canadians know?

(Boisclair, Lusardi and Michaud, JPEF 2017)

Distribution of responses across the Canadian population
(2012 Canadian Securities Administrators Survey)

	Responses		
	Correct	*Incorrect*	*DK*
Interest rate	77.9%	13.2%	8.8%
Inflation	66.2%	17.7%	16.1%
Risk diversif.	59.3%	9.4%	31.3%

NB: Less than half (42.5%) correctly answer all 3 questions. About 1/3 do not know about risk.

International evidence on financial literacy

- Initial evidence from 15 countries:

- USA
- Germany
- The Netherlands
- Italy
- Russia
- Sweden
- New Zealand
- Japan
- Australia
- France
- Switzerland
- Romania
- Chile
- Finland
- Canada

Using the Big Three, we have found that financial literacy is low in both developed and developing economies

Main findings across countries

- Strikingly similar findings across countries
  - Low percentage of people who know the Big Three
- Risk diversification is what people know the least
- Do not know answers play an important role

Special issue of JPEF, October 2011

We published a paper for each participating country (8 countries)

Examines the link between financial literacy and retirement planning

They are the most cited papers of *JPEF*

We had other special issues in other journals

Another good journal where to publish work on financial literacy

International comparison, cont.

- Evidence from other countries and updating the evidence with a focus on inflation (special issue of the *Journal of Financial Literacy and Wellbeing*, 2023)

  - Latin America (Peru and Uruguay)
  - Eastern Europe (9 countries)
  - Singapore
  - **Finland**
  - **Italy**
  - **Japan**
  - **US**

How much do Americans know? New evidence

Distribution of responses

(2021 National Financial Capability Study)

	Responses		
	Correct	*Incorrect*	*DK*
Interest rate	69.4%	14.2%	15.4%
Inflation	53.1%	27.9%	23.1%
Risk diversif.	41.5%	12.5%	45.2%

NB: Less than 1/3 (28.5%) correctly answer all 3 questions. About 45% do not know about risk.

BIG Five: Two more questions (added in 2009)

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
False
Do not know
Prefer not to say

If interest rates rise, what will typically happen to bond prices?
They will rise
They will fall
They will stay the same
There is no relationship between bond prices and the interest rate
Do not know
Prefer not to say

Some comments

- The Big Three and Big Five had two different objectives
- We designed richer measures of financial literacy, but not many were used internationally
- In 2014, we were able to collect data on financial literacy around the world (5 questions but around the Big Three topics)

Who knows the least?

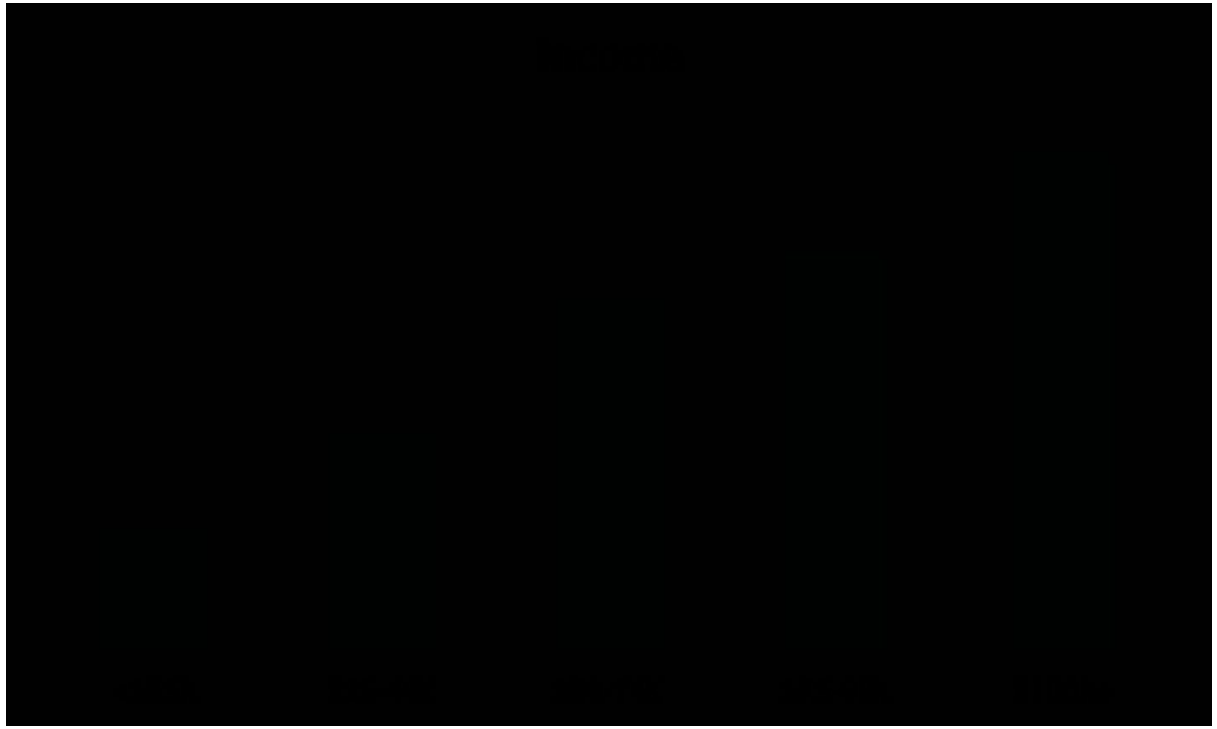
Financial literacy in America (2021 NFCS), by age

Hump-shaped profile across age/cohorts

Source: 2021 NFCS

Financial literacy by income and education

Financial literacy and income…



… and education.

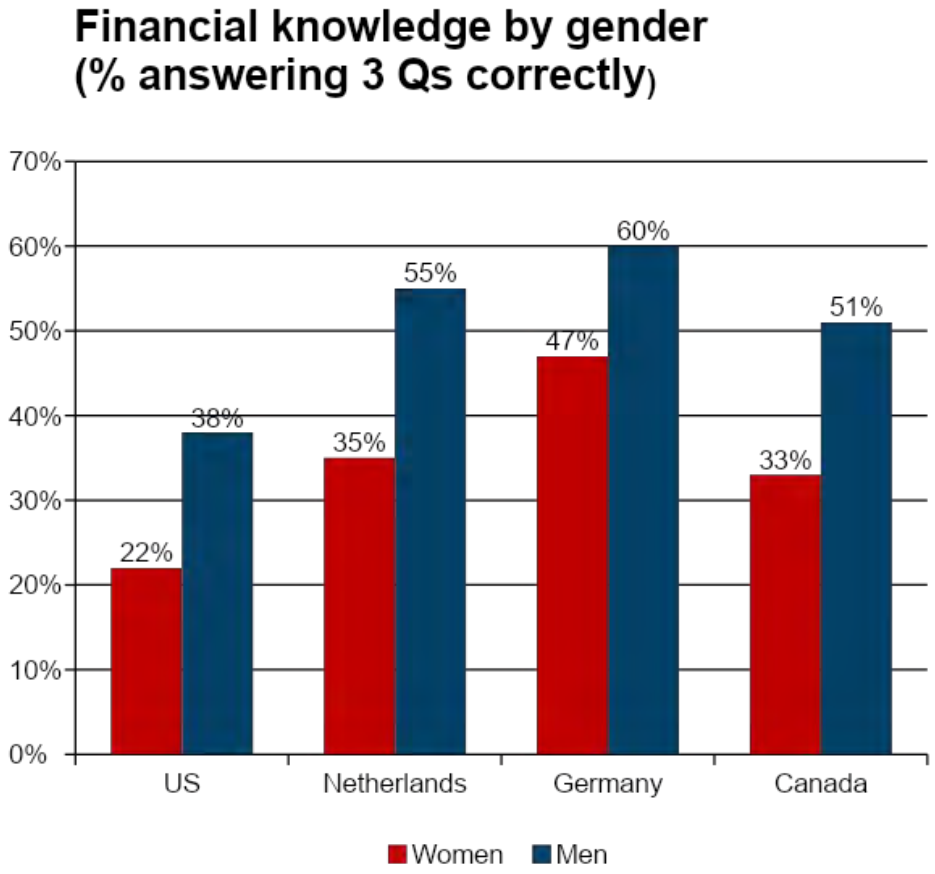
Source: 2021 NFCS

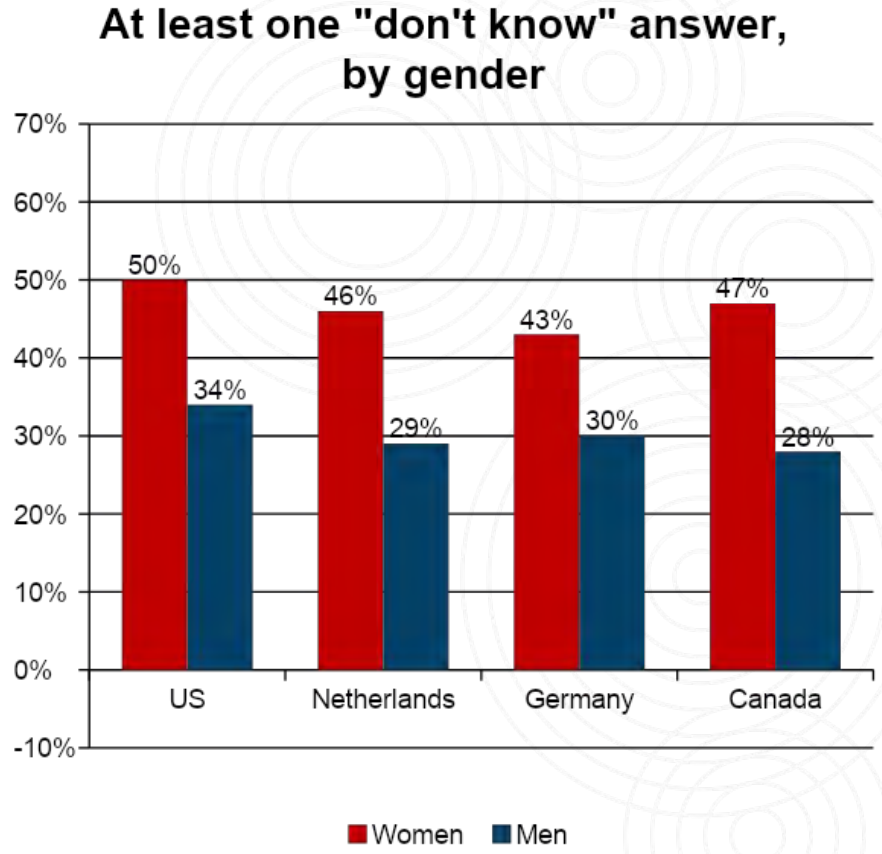
Explaining financial literacy (Lusardi, Michaud and Mitchell, JPE 2017)

- These findings inspired Olivia Mitchell, Pierre-Carl Michaud, and I to work on a paper that was published in the JPE in 2017
- Who benefits from financial literacy? And what are the costs of acquiring financial literacy?
- Consider a life cycle model of saving with financial literacy. Financial literacy affects the return on savings. We have to spend time and effort in acquiring financial literacy
- Financial literacy is a choice variable and we can derive the “optimal” amount of knowledge.

Gender gap in financial literacy

Women are disproportionately more likely than men to respond to a question with "do not know."





Source: Flat World

Focusing on gender differences

What happens if we take away the “do not know” option?

This is what we did in a project with data from the Dutch Central Bank using the Big Three.

- The gender difference shrinks but does not go away
- Women know more than they think they do, but they are not confident about their knowledge
- Both knowledge and confidence matter for financial behavior (investing in the stock market)

Bucher-Koenen, Alessie, Lusardi and van Rooij, 2025, “Fearless woman: Financial literacy, confidence and stock market participation.” Published in *Management Science, 2024*

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https://pubsonline.informs.org/journal/mnsc

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Fearless Woman: Financial Literacy, Confidence, and Stock Market Participation

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Abstract. Women are less financially literate than men, and it has been difficult to determine whether this gap reflects a lack of knowledge or, rather, a lack of confidence. To address this important research question, we designed two survey modules that enable us to calculate the extent to which confidence matters for both financial literacy and behavior. We developed and estimated a model that provides a new measure of financial literacy and disentangles confidence from knowledge. We find that confidence accounts for about 30% of the gender difference in financial literacy. Moreover, both financial knowledge and confidence are linked to stock market participation. We also provide researchers with a method to account for confidence in regressions.

History: Accepted by Bo Becker, finance.

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Funding: This work was supported by the European Investment Bank Institute (n/a), which is gratefully acknowledged. The findings and views presented in this article are entirely those of the authors and should not be attributed in any manner to the European Investment Bank or its Institute or to the European Central Bank, the Eurosystem, or De Nederlandsche Bank.

Supplemental Material: The online appendix and data files are available at https://doi.org/10.1287/mnsc.2023.00425.

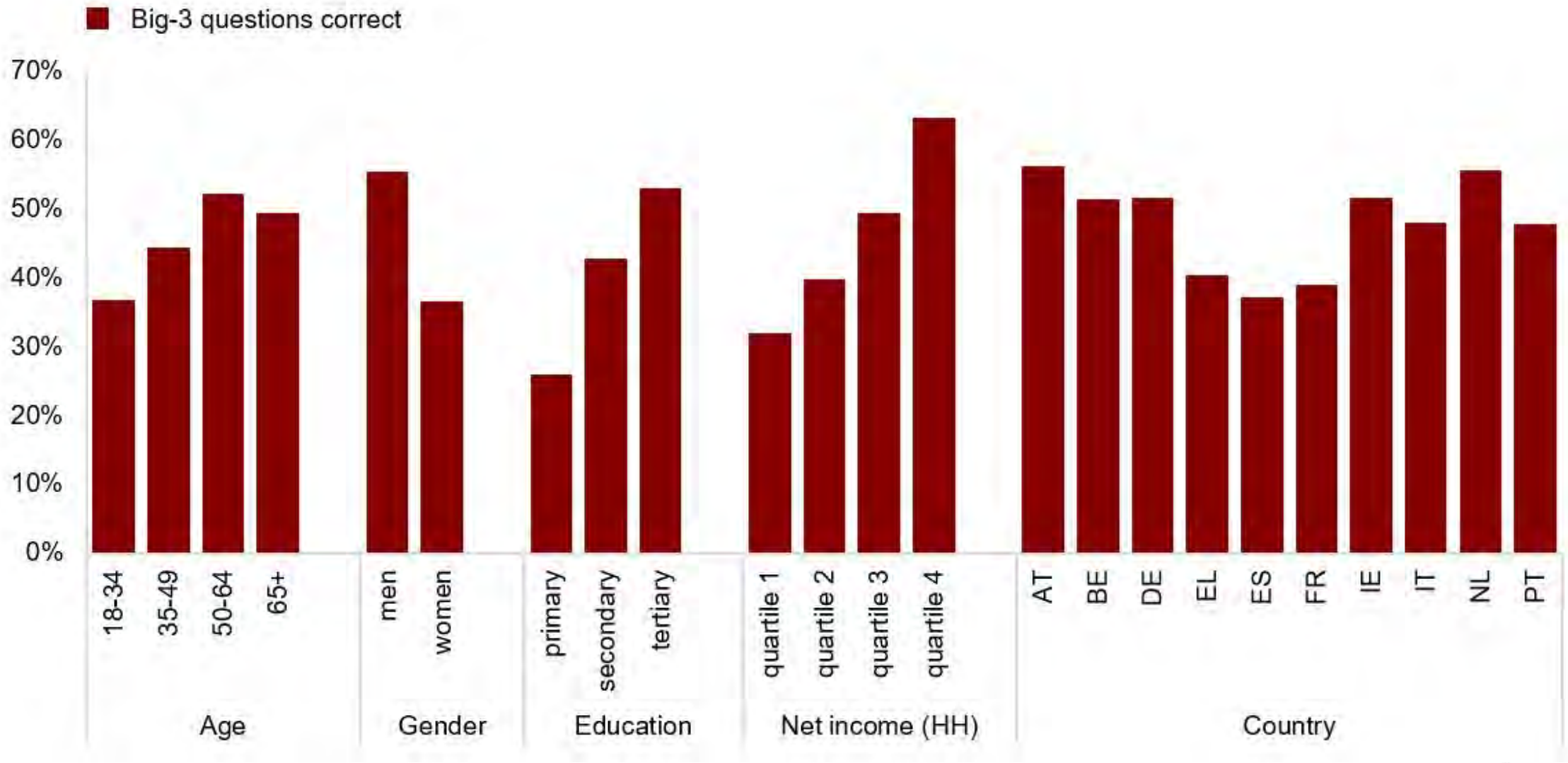
Keywords: financial knowledge • gender gap • measurement error • financial behavior

New data on the Big Three: ECB's Consumer Expectations Survey (CES)

- Data collection started in January 2020
- Unique data and information: combines data on financial literacy with data on household perceptions, expectations and behavior (incl. consumption, saving/ investing, borrowing)
- Mixed-frequency modular approach (monthly, quarterly, annual topical modules; special-purpose ad hoc surveys)
- For a description see: ECB Evaluation Report (OP, 2021) and Georgarakos and Kenny (JME, 2022)

Financial literacy – summary statistics

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



Session3: Measurement of financial literacy – part II

Started our own data collection in 2017

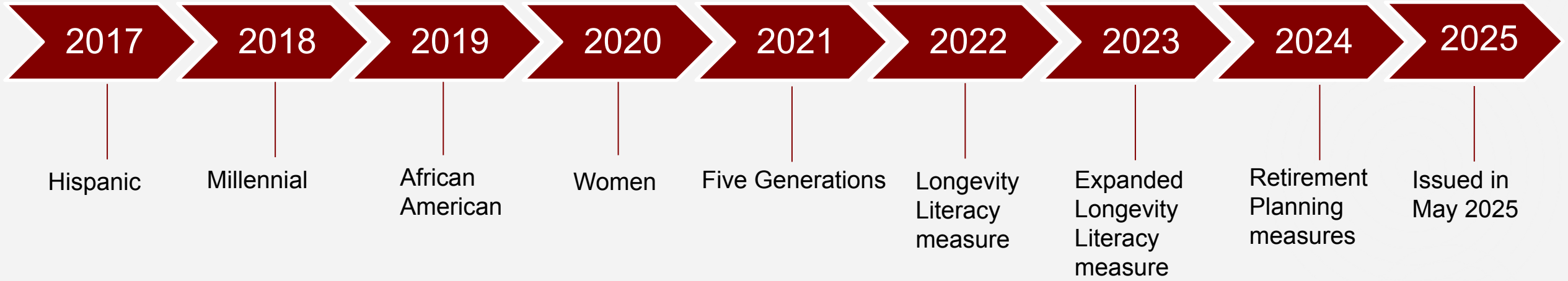
- Designed an index of personal finance knowledge: TIAA Institute – GFLEC Personal Finance Index (*P-Fin Index*)
- Data is collected each year (in January)
- We can focus on specific areas of interest

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.
- The P-Fin Index relates to common financial situations that individuals encounter
- 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+).
- Focus on a specific topic each year

Nine years of P-Fin Index data (2017-2025)

Yearly data collection of P-Fin Index questions and personal finance decision indicators.



Yearly oversample of specific demographic subgroups and insights on specific topics.

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

An example question

Paula saves $500 each year for 10 years and then stops saving additional money. At the same time, Charlie saves nothing for 10 years but then receives a $5,000 gift which he decides to save. If both Paula and Charlie earn a 5% return each year, who will have more money in savings after 20 years?

- Paula
- Charlie
- Paula and Charlie will have the same amount
- Don't know
- Refuse to answer

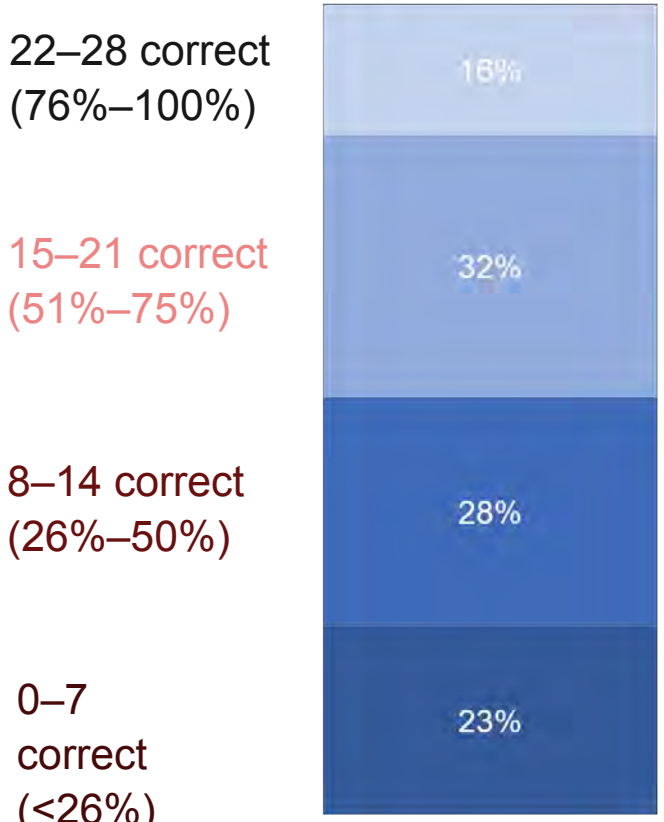
Results:	
Correct	**51%**
Incorrect	**26%**
Don't Know	**22%**
No Answer	**1%**

Source: TIAA Institute-GFLEC Personal Finance Index (2025).

Financial literacy: A failing grade

% of P-Fin Index questions answered correctly

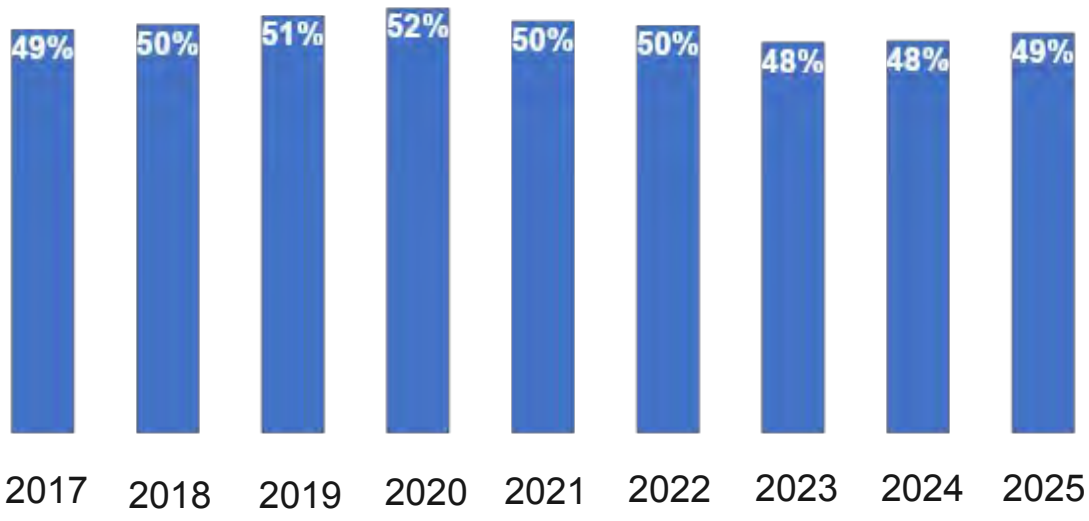
Distribution of correct answers to *P-Fin Index* questions



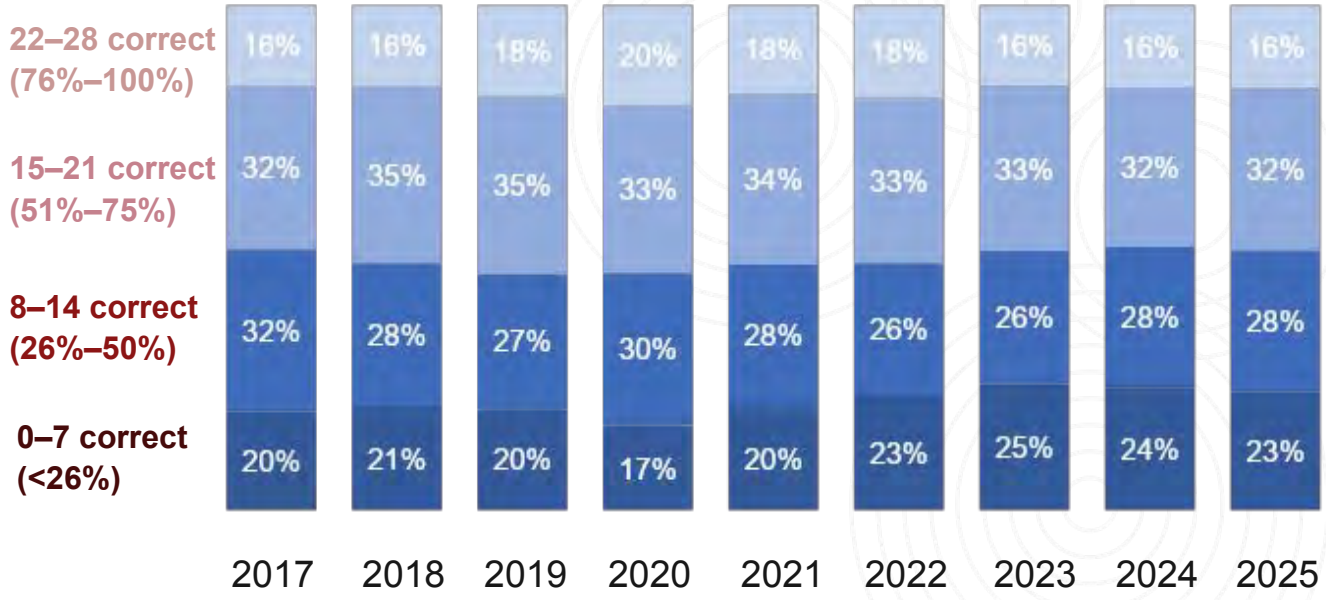
Source: TIAA Institute-GFLEC Personal Finance Index (2025).

Financial (il)literacy is holding steady: 2017-2025

% of P-Fin Index questions answered correctly



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



Source: TIAA Institute-GFLEC Personal Finance Index (2017-2025)

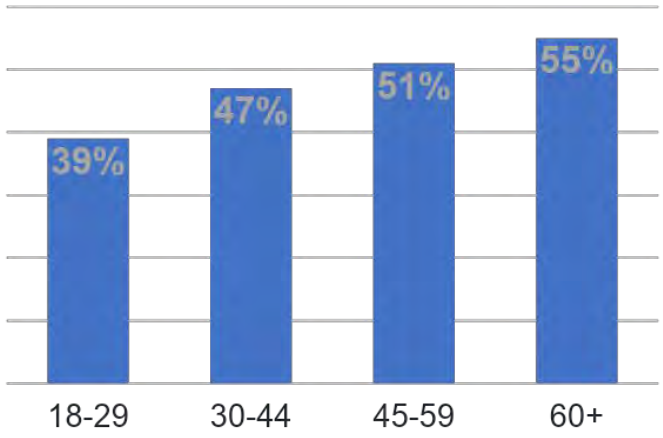
What do people know the most and the least

Source: TIAA Institute-GFLEC Personal Finance Index (2025).

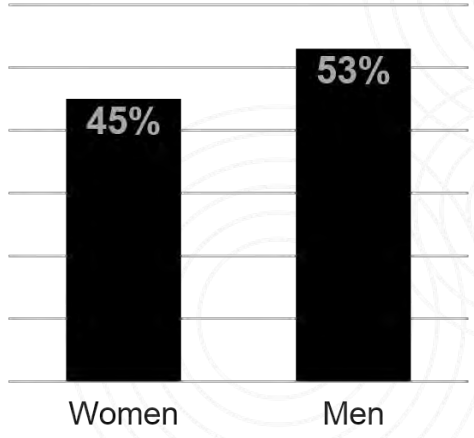
Gaps in financial knowledge: Who are the most vulnerable?

% of P-Fin Index questions answered correctly

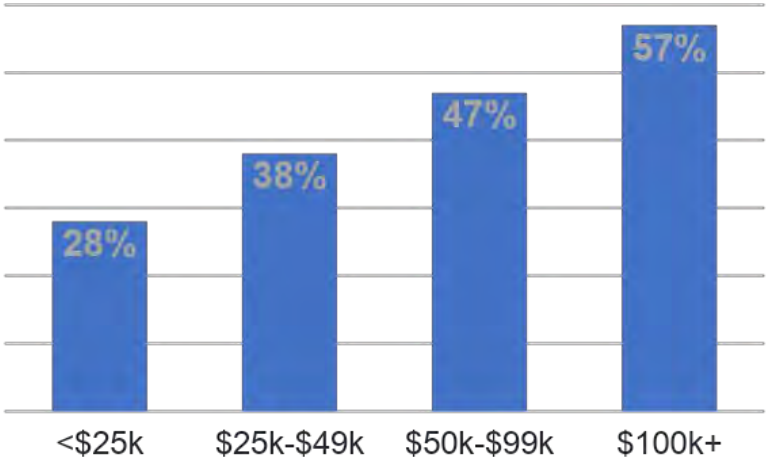
Age



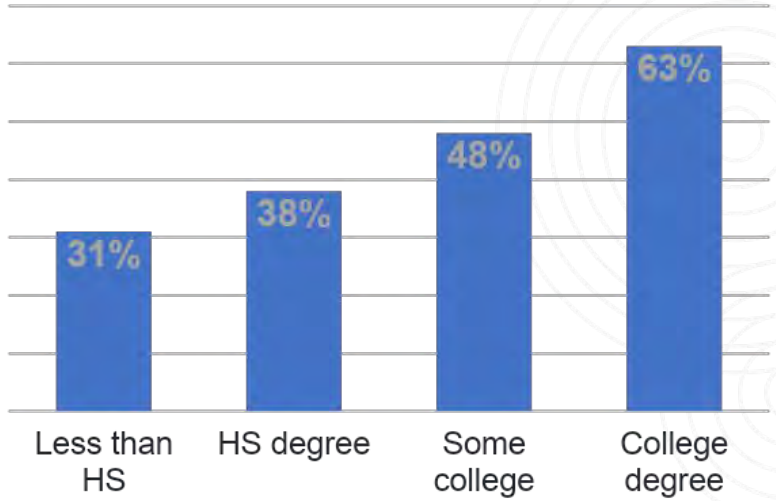
Gender



Income

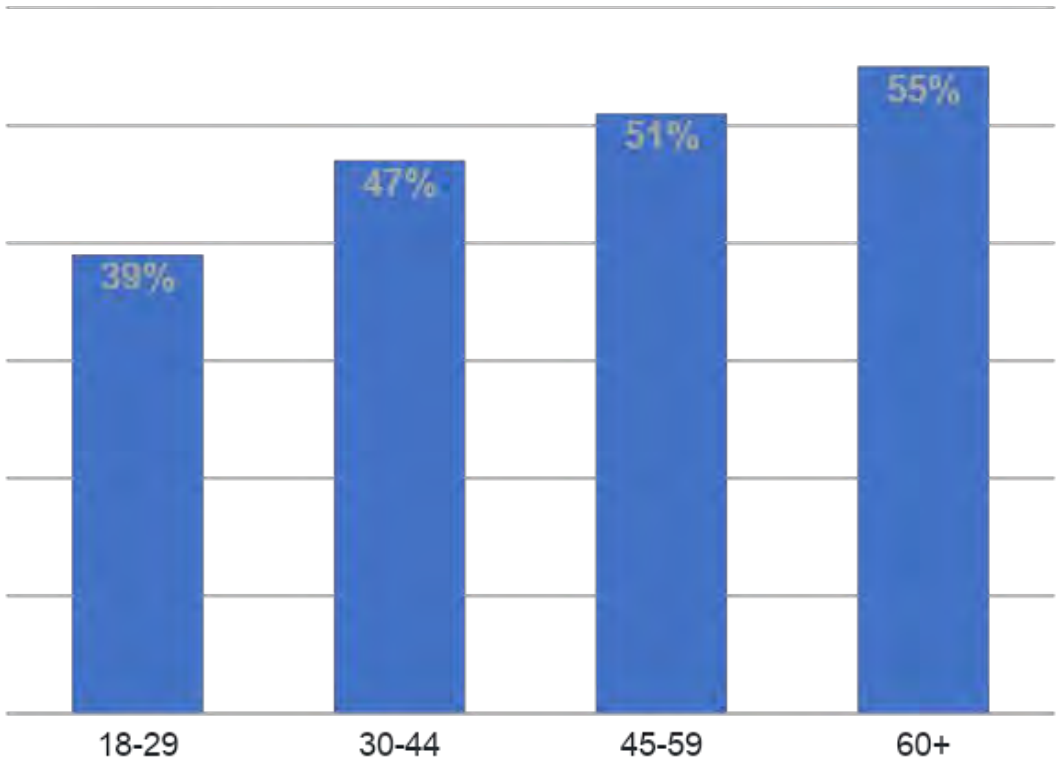


Education

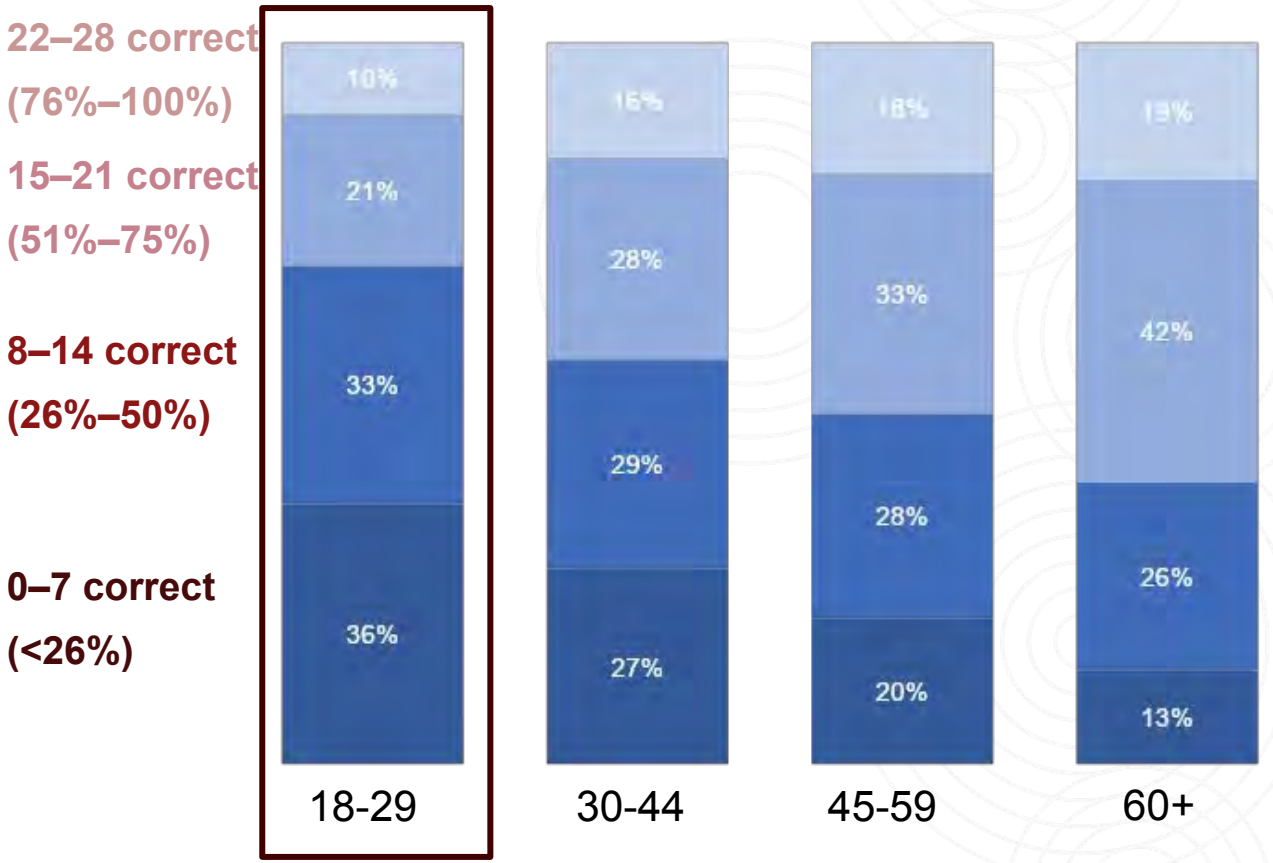


Gaps in financial knowledge: Age groups/cohorts

% of P-Fin Index questions answered correctly



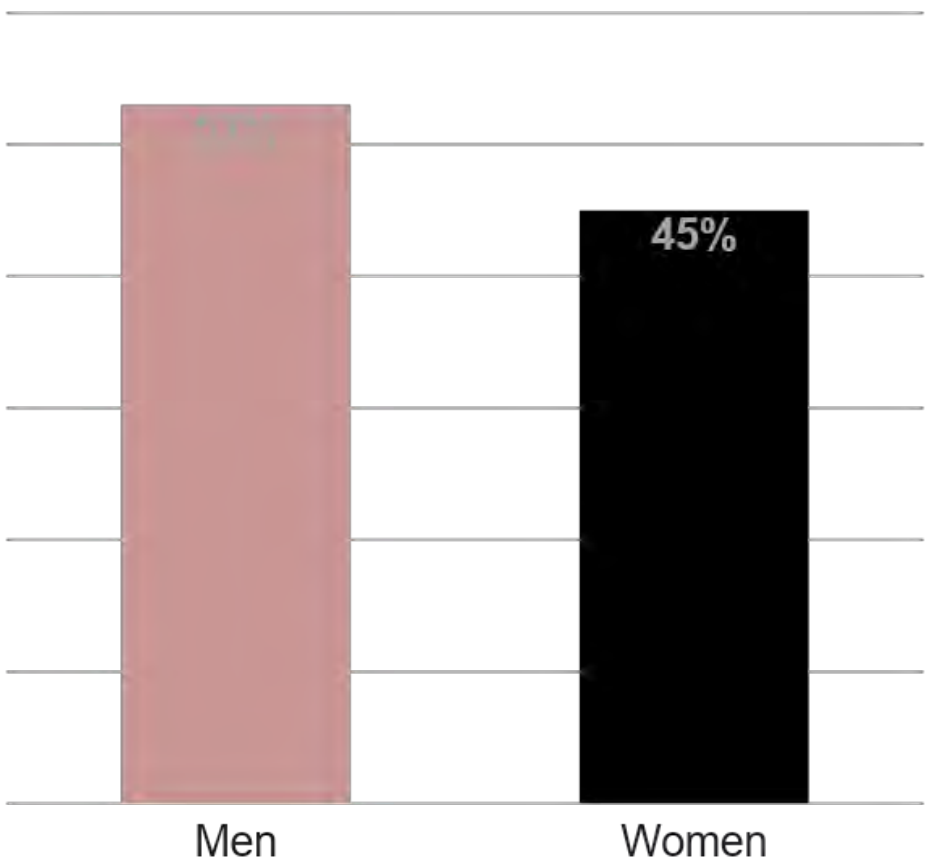
Distribution of correct answers to P-Fin Index questions



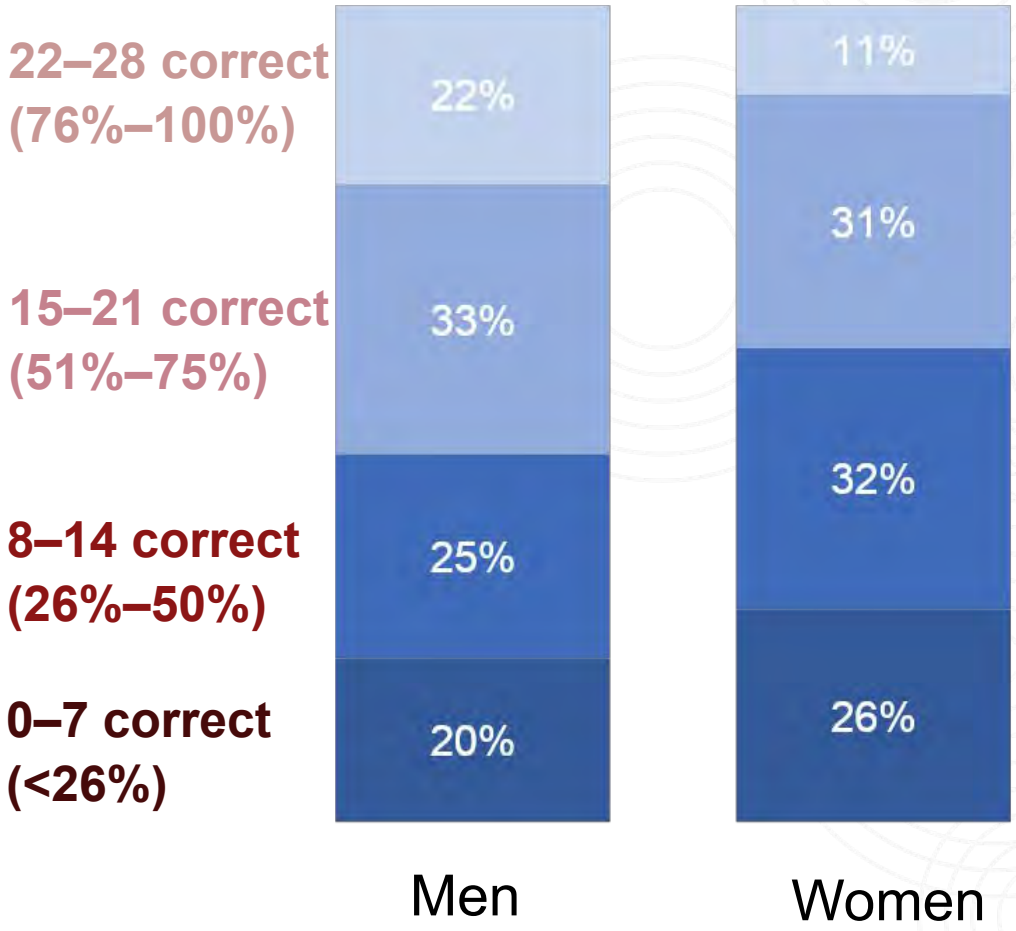
Source: TIAA Institute-GFLEC Personal Finance Index (2025).

Gaps in financial knowledge: Women and men

% of P-Fin Index questions answered correctly

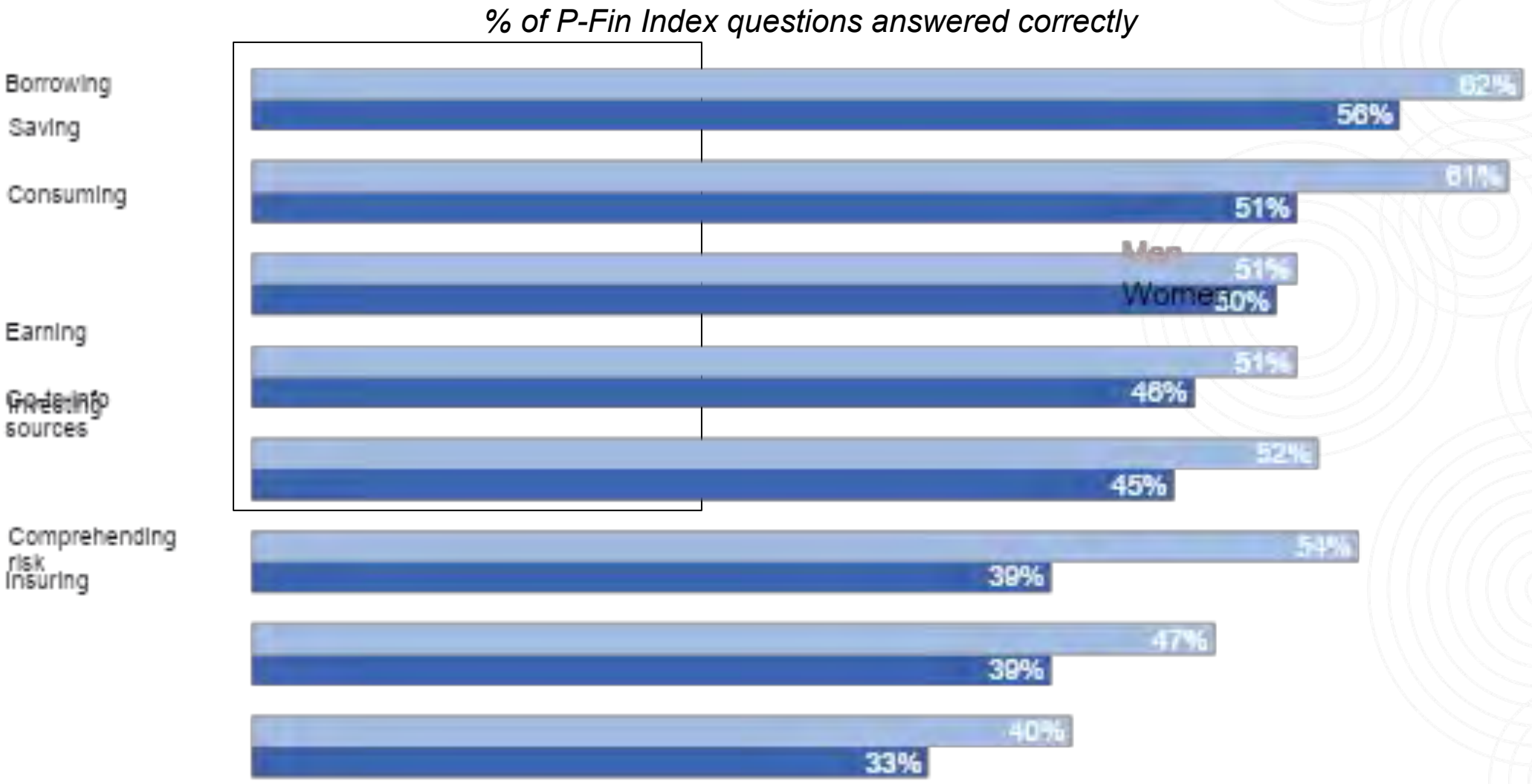


Distribution of correct answers to P-Fin Index questions



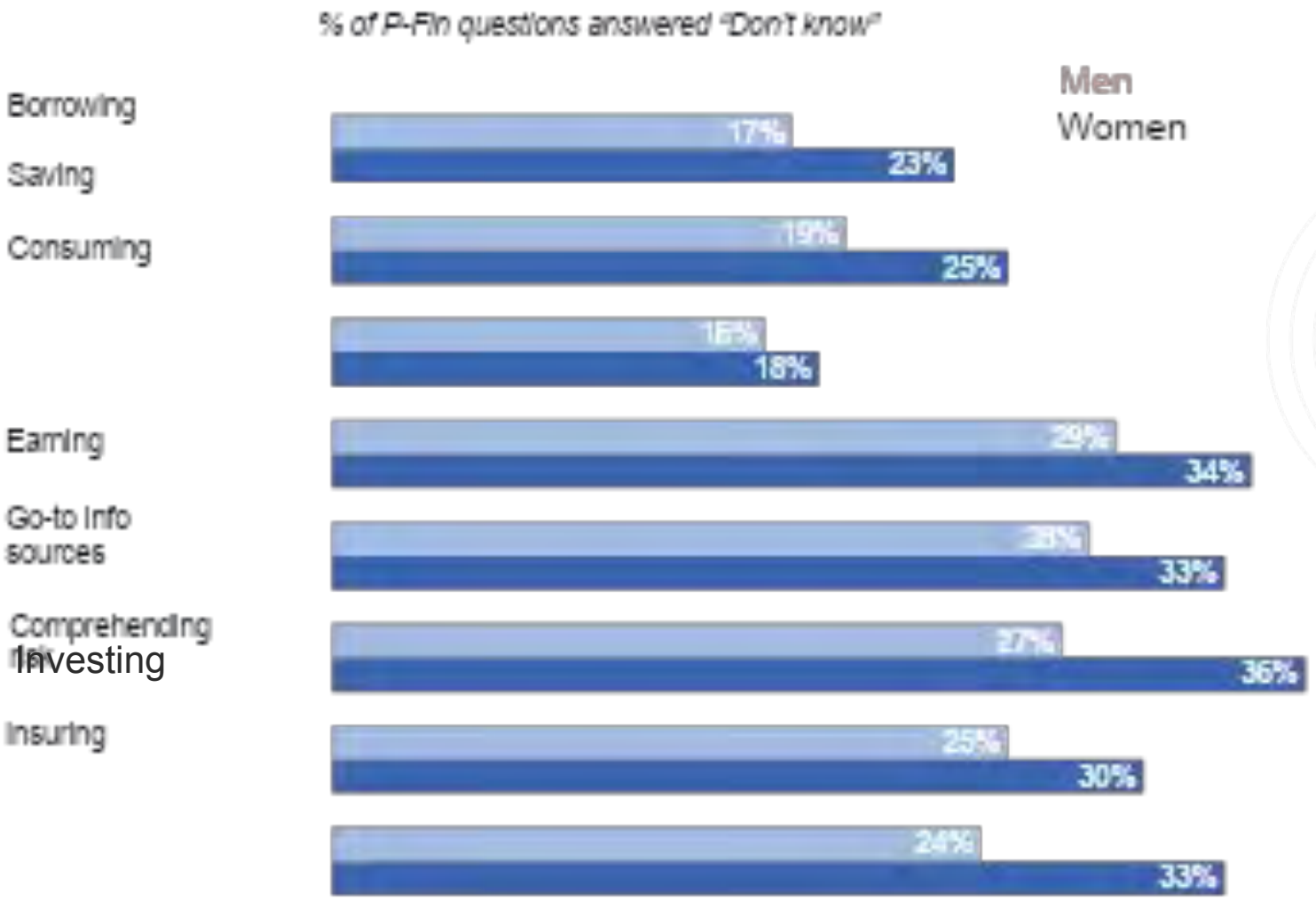
Source: TIAA Institute-GFLEC Personal Finance Index (2025).

Financial literacy gender gap in each topic...



Source: TIAA Institute-GFLEC Personal Finance Index (2025).

...and in answering “Do not know”



Source: TIAA Institute-GFLEC Personal Finance Index (2025).

“Calculated risk”? New question in 2021

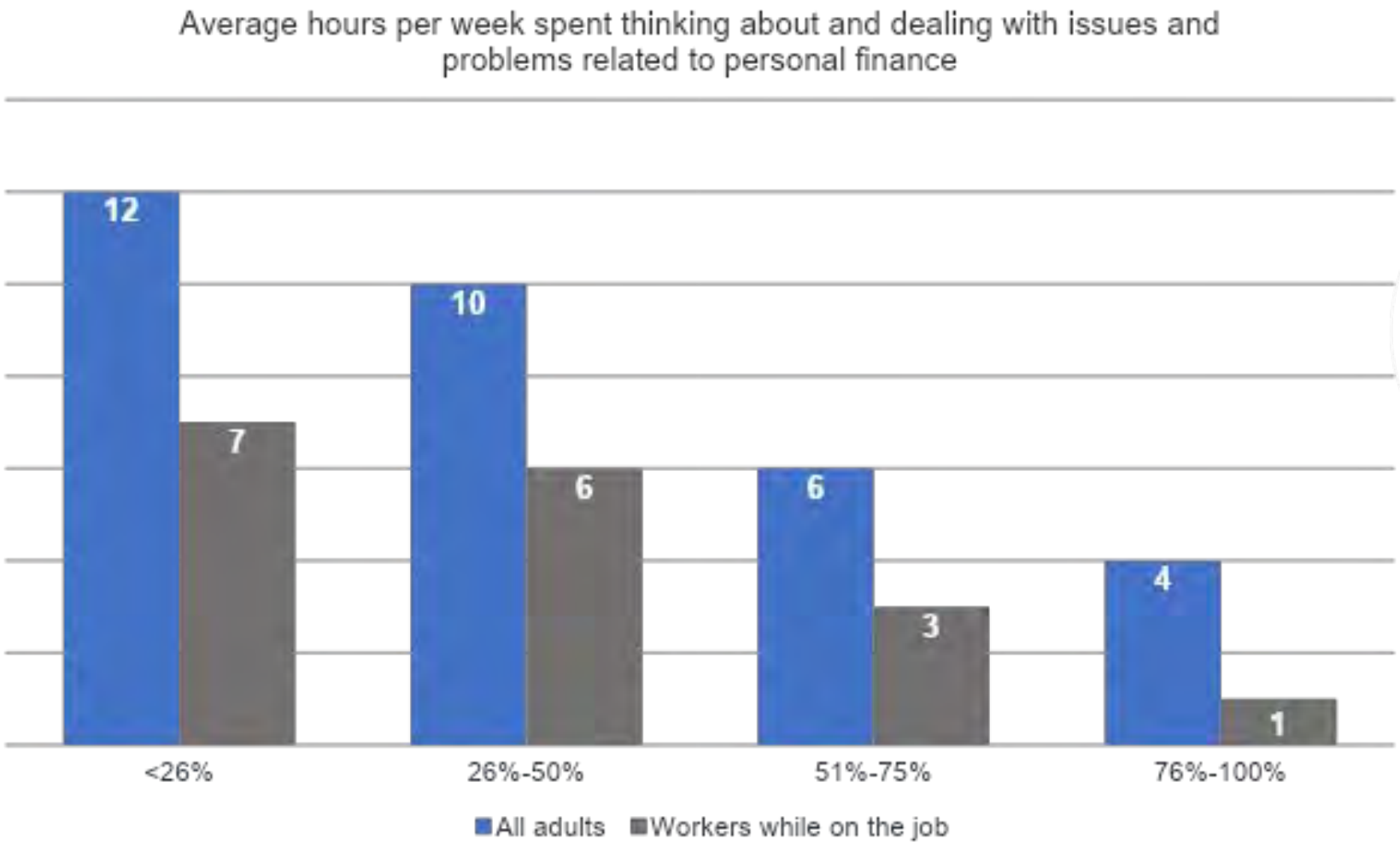
Which of the following indicates the highest probability of getting a particular disease?

- There is a one-in-twenty chance of getting the disease
- 2% of the population will get the disease
- 25 out of every 1,000 people will get the disease
- Don’t know
- Refuse to answer

Results:
Correct 28%
Incorrect 19%
Don’t Know 53%
No Answer 0%

Source: TIAA Institute-GFLEC Personal Finance Index (2021).

A simple measure of the cost of financial illiteracy



People spend an average of 8h per week thinking about and dealing with financial issues and problems. An average of 4h per week occur at work.

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

To summarize

- The findings in the Big Three are replicated in the P-Fin Index
- Very similar patterns across countries and time
- Large differences across demographic groups

If you do not have room for a lot of questions, using the Big Three can be enough.

New paper: Validating the Big Three

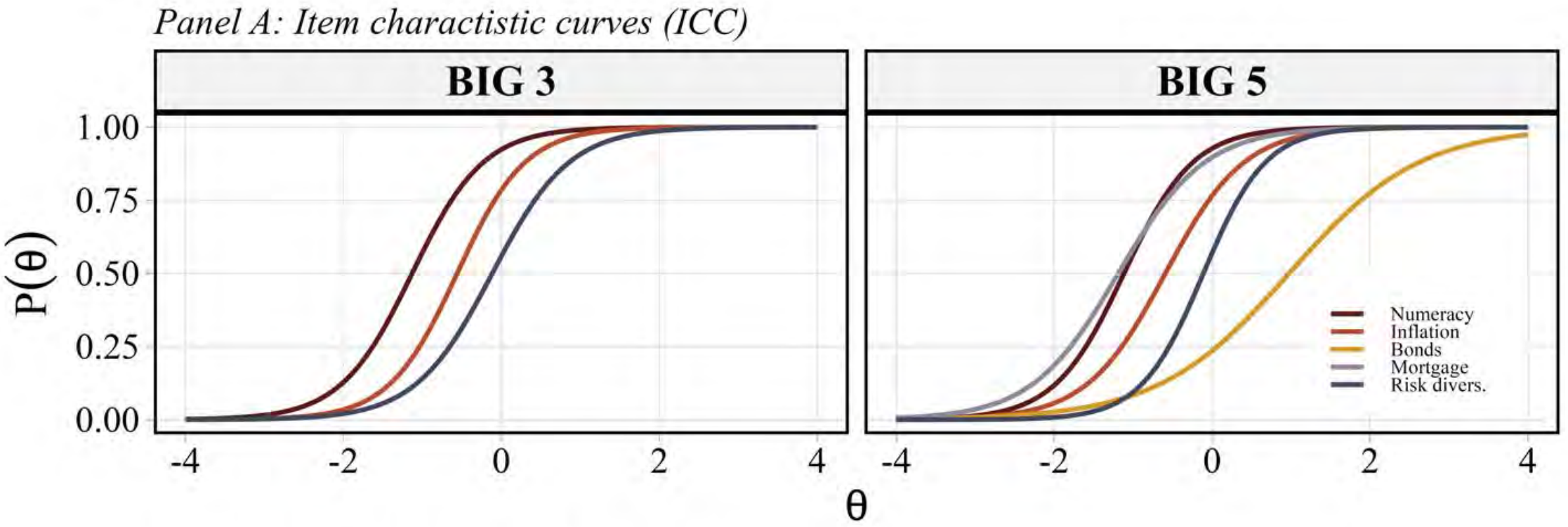
Part I: Evaluation of the Big Three (and Five) questions using data from the 2012 and 2018 National Financial Capability Study (RAND-ALP)

- Measurement models (IRT) suggest adequate scale validity irrespective of number of questions used (three vs. five)
  - No evidence of measurement variance across demographic subgroups
  - Good discrimination and reliability
  - No evidence of confounding latent constructs measured alongside financial knowledge

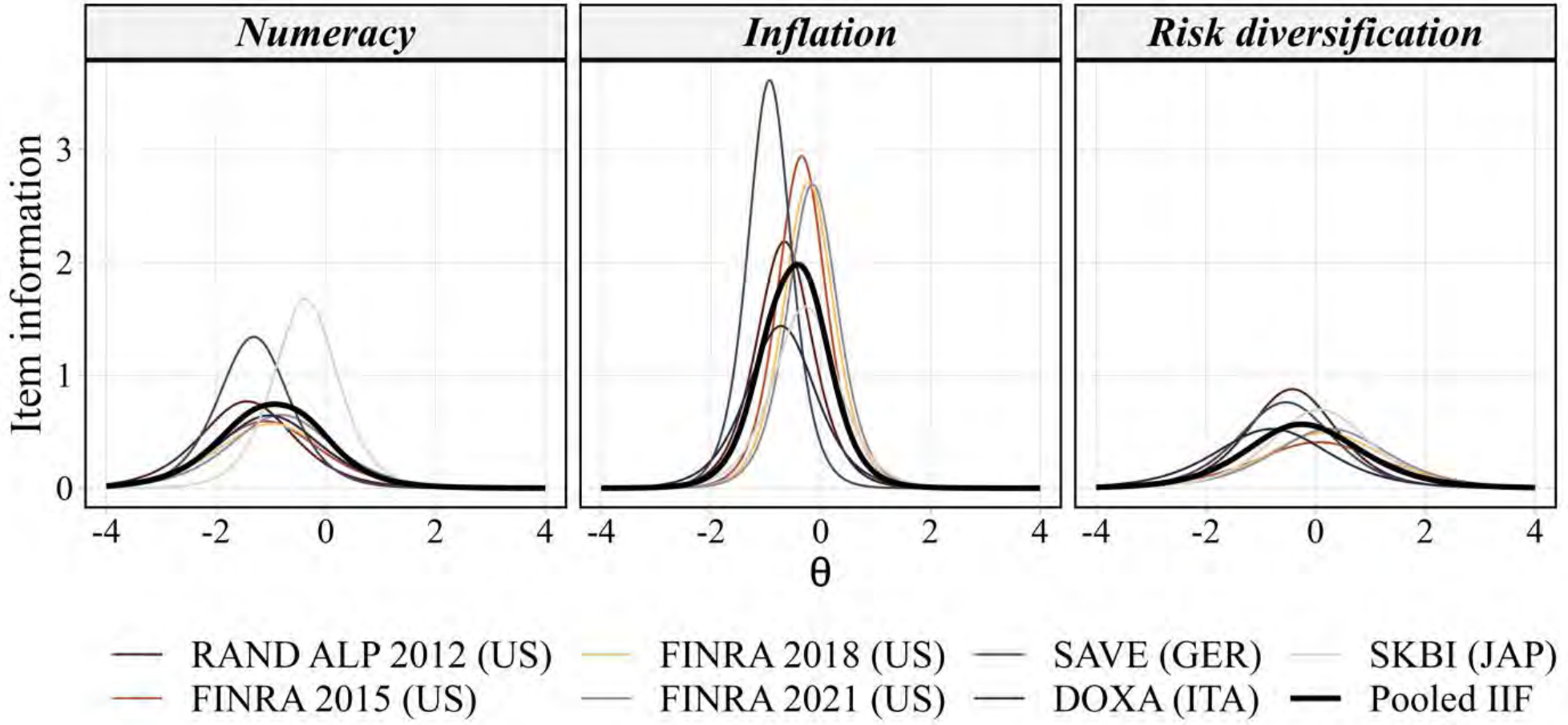
Part II: Replicate the analysis in seven additional datasets from Germany, Italy, Japan, and the United States and integrate in meta-analysis

- Question characteristics and scale reliability assessed by test information functions are remarkably similar across countries
- No evidence of measurement variance across countries
- Big Three allow for valid cross-country comparisons of basic financial literacy

IRT Model: ICCs for the Big Three and Five



Replicating the results for other countries (item information)



Session4: Surveys and data to study financial literacy

Many data sets include data on financial literacy

After adding financial literacy questions in the HRS module:

- I worked with a team at the Dutch Central Bank Household Survey to design a richer set of questions, that were added to the survey in 2005. They served as pilot too
- We were able to then add a similar set of questions in the American Life Panel (ALP) in 2008
- We added the Big Three to the National Longitudinal Survey of Youth (NLSY) in 2007-2008
- While working for the US Treasury (as academic advisor to the Office of Financial Education), I helped design questions for the National Financial Capability Study. The first wave started in 2009 and it included the Big Five
- The OECD's Programme for International Student Assessment (PISA) added a module on financial literacy to PISA in 2012, and I led the group of experts that did the assessment. Thus, we have data for 15-year old students

Many data sets include data on financial literacy (cont.)

- In 2014, GFLEC collaborated with Gallup and the World Bank to collect data on financial literacy in more than 140 countries around the world (S&P Global Finlit Survey)
- Questions on financial literacy were added to the Survey of Consumer Finances (SCF) in 2016 and to the Survey of Household Economics and Decisionmaking (SHED) in 2021
- In 2016 we started designing the P-Fin Index
- Questions on financial literacy started to be added in central bank surveys around the world, including the European Central Bank (ECB) surveys
- We recently added a module on financial literacy (yet another and richer measure) in the Understanding America Study (UAS)

Research findings about the young from the NLSY (age: 23-28 in 2007-2008)

- In the US, young people who are financially literate are disproportionally white males from college-educated families.
- Financial literacy can be linked to the wealth of parents when young people (age: 23-28) were growing up (they were 12-
- Being financially literate is learned at the dinner table, if one has rich parents

the journal of consumer affairs

Full Access

Financial Literacy among the Young

ANNAMARIA LUSARDI, OLIVIA S. MITCHELL, VILSA CURTO

First published: 01 June 2010 | https://doi.org/10.1111/j.1745-6606.2010.01173.x | Citations: 722

Find it @ Stanford

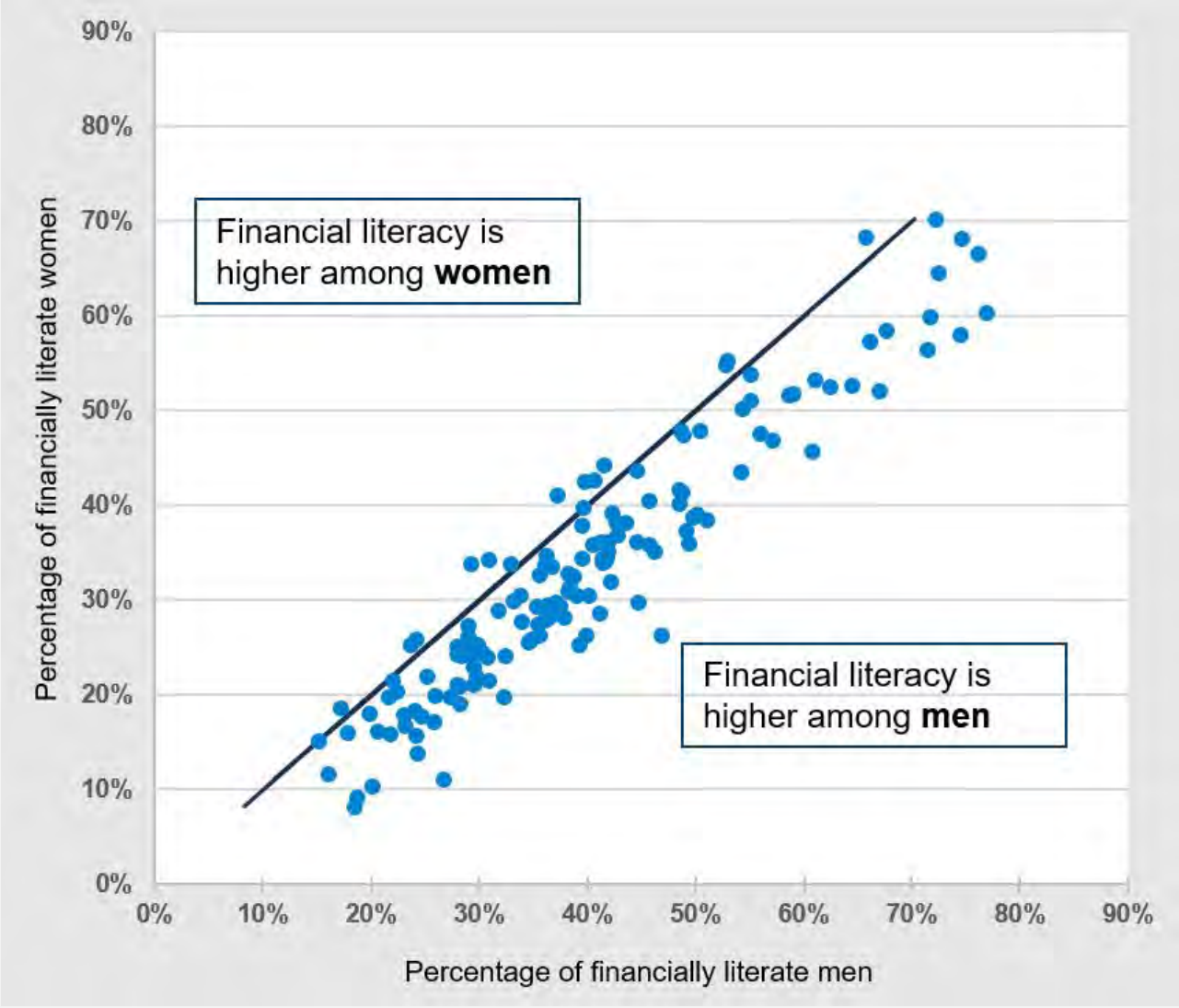
The research reported herein was conducted pursuant to a grant from the US Social Security Administration (SSA) to the Michigan Retirement Research Center, funded as part of the Retirement Research Consortium. We also received a generous grant from FINRA Investor Education Foundation. Additional support was provided by the Pension Research Council and Boettner Center at the Wharton School of the University of Pennsylvania. We are very grateful to Dan Black for his help with the data and would also like to thank Anna Paulson for helpful suggestions and comments. Hiroaki Matsuura provided excellent research assistance. Opinions and errors are solely those of the authors and not of the institutions with which the authors are affiliated.

SS

Striking finding: Gender gap in financial literacy everywhere

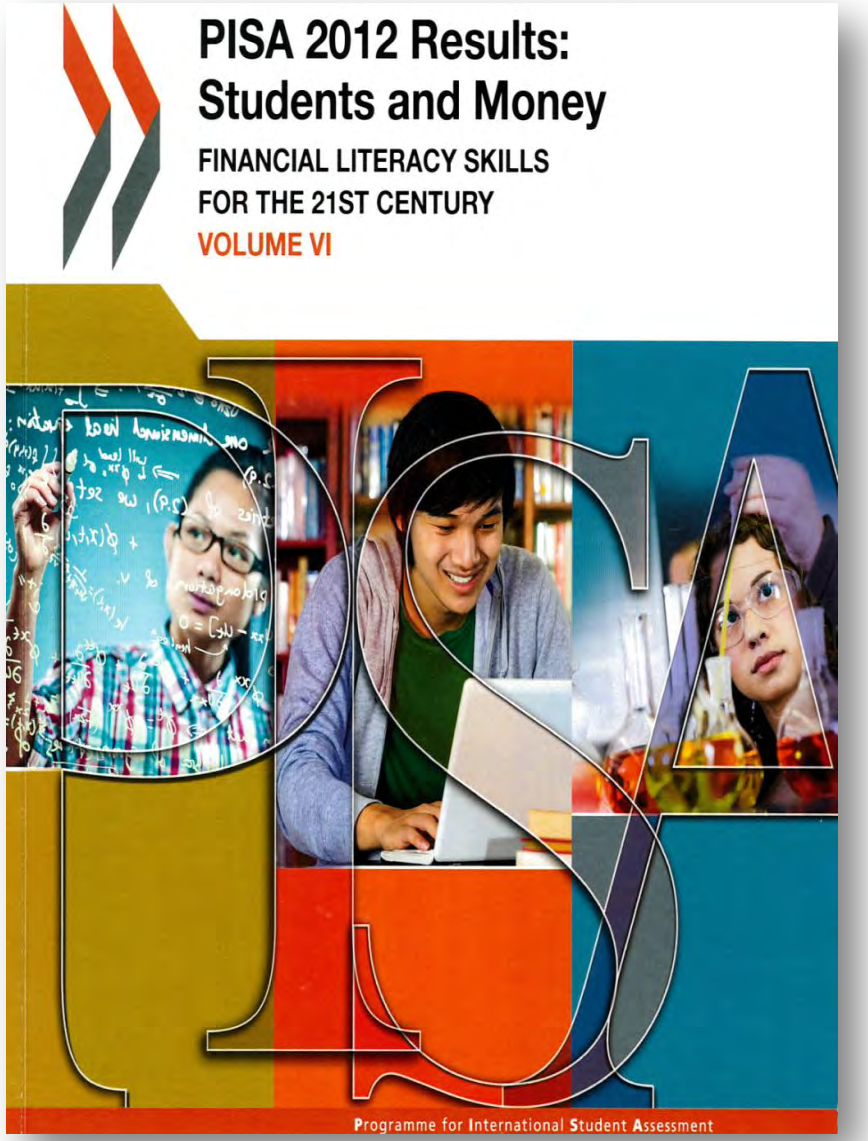
In most economies around the world, men have a better understanding of basic financial concepts than women.

Findings are from the S&P Global Finlit Survey. The data was collected in 2014.



Source: Global Finlit Survey 2014

Financial literacy was added to PISA in 2012 already



Striking finding: In some countries (for example, Italy) gender differences in financial literacy are already present among 15-year old students

The socio-economic background (education and wealth of the family) plays an important role in financial literacy

Special issue of the Journal of Financial Literacy and Wellbeing on data

Volume 2 - Issue 1 - April 2024

Sorted by Page/Article number: low to high

Article

Financial literacy in the Understanding America Study

Marco Angrisani, Arie Kapteyn

Published online by Cambridge University Press: 05 September 2024, pp. 1-20

Article Access Open access PDF HTML Export citation

View abstract

Financial literacy in the DNB Household Survey: insights from innovative data collection

Maarten van Rooij, Rob Alessie, Annamaria Lusardi

Published online by Cambridge University Press: 18 October 2024, pp. 21-37

Article Access Open access PDF HTML Export citation

View abstract

More on data

- Surveys and data to study financial literacy

- A focus on UAS data to study financial literacy and how to access them

- Main results on financial literacy and behavior from the UAS

- Evidence from the four UAS waves, the UAS visualization toolkit and a recent survey experiment

- What is missing? Let's fill the gaps

- Designing new questions

Understanding America Study (UAS) Surveys

The UAS

- It is the probability-based longitudinal study housed at the Center for Economic and Social Research (CESR) at University of Southern California (USC).

- The UAS administers a series of “core surveys” administered to the entire panel on a two-year frequency, reaching about 15,000 US residents (18+) (including a 3,500-person California oversample) recruited by address-based sampling and provided with Internet-enabled tablets if needed.

- The UAS national sample is expected to grow to 20,000 respondents by 2025, with oversamples of African Americans, Asians, and Hispanics.

- Surveys are conducted online in English and Spanish.

The UAS, cont.

- Recruitment: replenishment samples are added to the existing pool of panel members on a regular basis to improve the representativeness of the target population.

- Incentive: $20 per 30 minutes of survey time.

- New opportunities: Thanks to a recently awarded grant from the National Institute on Aging, with support from the Social Security Administration, they are able to offer free question time to researchers.

- Five financial literacy questions: numeracy, interest compounding, inflation, time value of money, and money illusion.

The benefits of using the UAS data

- A majority of the UAS data is publicly available.
- Researchers gathering data in the UAS can link newly collected data to the existing longitudinal information available for each panel participant.
- Also, the data can be linked with administrative data such as the Centers for Medicare and Medicaid Services (CMS) records or Social Security Earnings Records.

The UAS data

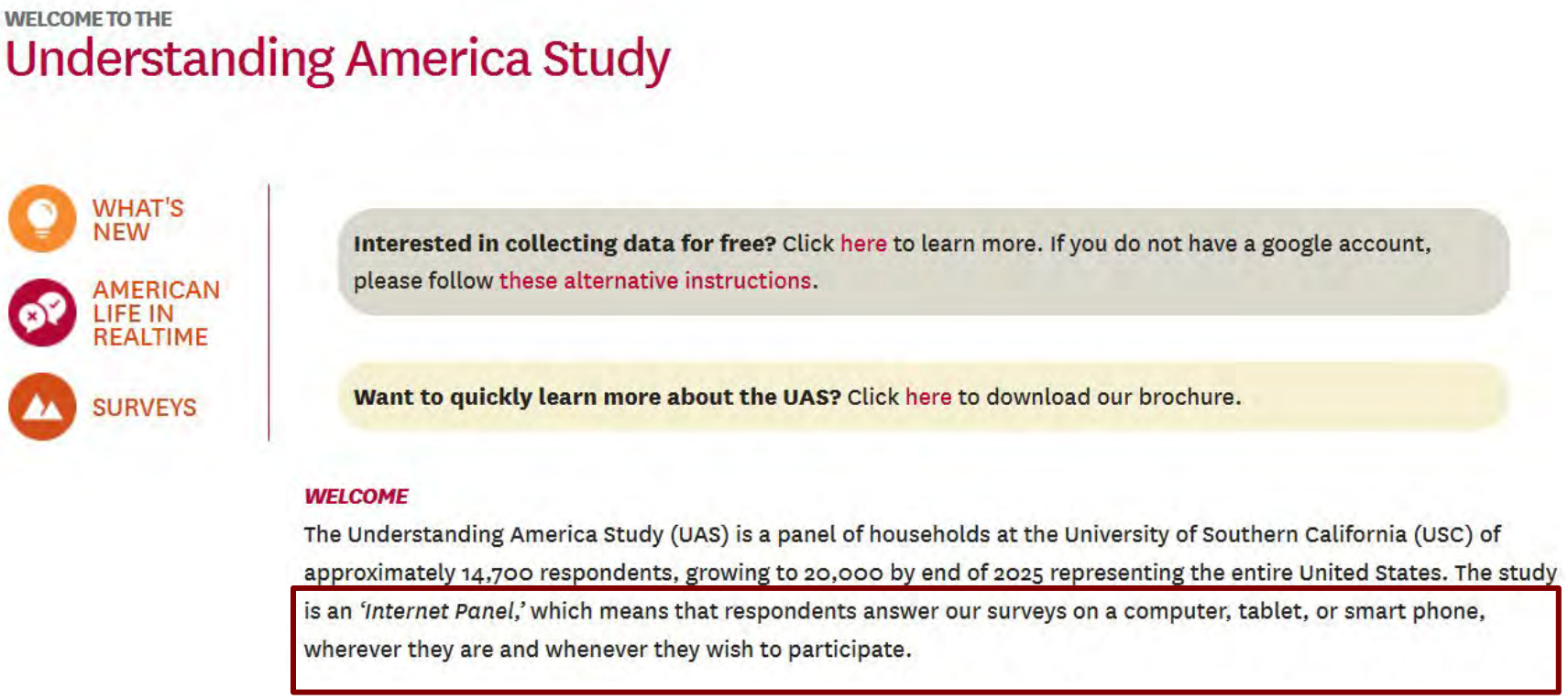
The study collects active and passive data plus para-data

- *active data:* HRS questionnaire, cognitive tests, personality traits, mental health, disability, employment and occupation, respondents' knowledge of Social Security rules, financial literacy, and much more.
- *passive data:* through wearables, such as Fitbits and air quality monitors.
- *para-data:* type of device used by the participant (e.g., a laptop, a smartphone, and a tablet), survey completion time, and time spent on each screen, as well as the number of taps, clicks, or mouse movements).

- New in the May 2025 release: an urbanicity variable was added for each UAS wave.

The variable is based on panel members' current census tract of residence and the 2010 Rural-Urban Commuting Area (RUCA) codes released by the US Department of Agriculture's Economic Research Service.

How the website looks like



A primer on the UAS

An excellent start is the UAS Comprehensive File, which merges the data from a number core surveys in the UAS that are repeated every two years.

- The Comprehensive File also includes wave-specific weights.

- The UAS Comprehensive Data File can be linked with any of the UAS surveys not already included.

- The current version of the UAS Comprehensive File (May 2025) can be downloaded here (registration required).

- For a detailed explanation please have a look at the UAS Comprehensive File Data Description.

https://encr.pw/5CbEt

Measures of financial literacy in the UAS

The entire panel is administered an extensive battery of 14 financial literacy questions every two years.

These include the five questions added earlier to the Centerpanel and the ALP, described by Van Rooij et al. (2011) and Lusardi and Mitchell (2007), respectively.

Table 1. Financial literacy measures: panel breakdown

Number of assessments	Number of respondents
1	9,149
2	3,143
3	2,687
4	3,817
Total	18,796

Note: The table reports the total number of UAS respondents who completed the financial literacy module at least once and the breakdown by the number of times they completed it (from 1 to 4 times).

Question wording

- They always feature a “don’t know” option, capturing participants’ uncertainty or intention to decline to respond, which may have different implications from a wrong answer.

- Unlike other studies eliciting financial literacy (e.g., the National Financial Capability Study), there is not a “refuse to answer” option.

- It should be noted that to minimize item nonresponse, all UAS surveys include a one-time prompt that encourages respondents to answer any skipped question before moving on to the next one (low item nonresponse rate of about 0.1% across all UAS surveys).

Main findings on financial literacy from the UAS

Financial literacy results in UAS

- The UAS financial literacy score takes values between 0 and 14. Its weighted average by wave is reported in Figure 1.
- People get approximately two-thirds of the questions right – with a slight tendency to decline over time.
- This downward trend could be partly attributed to worsening of memory and cognitive functioning more broadly, which can adversely affect survey behavior and responses.

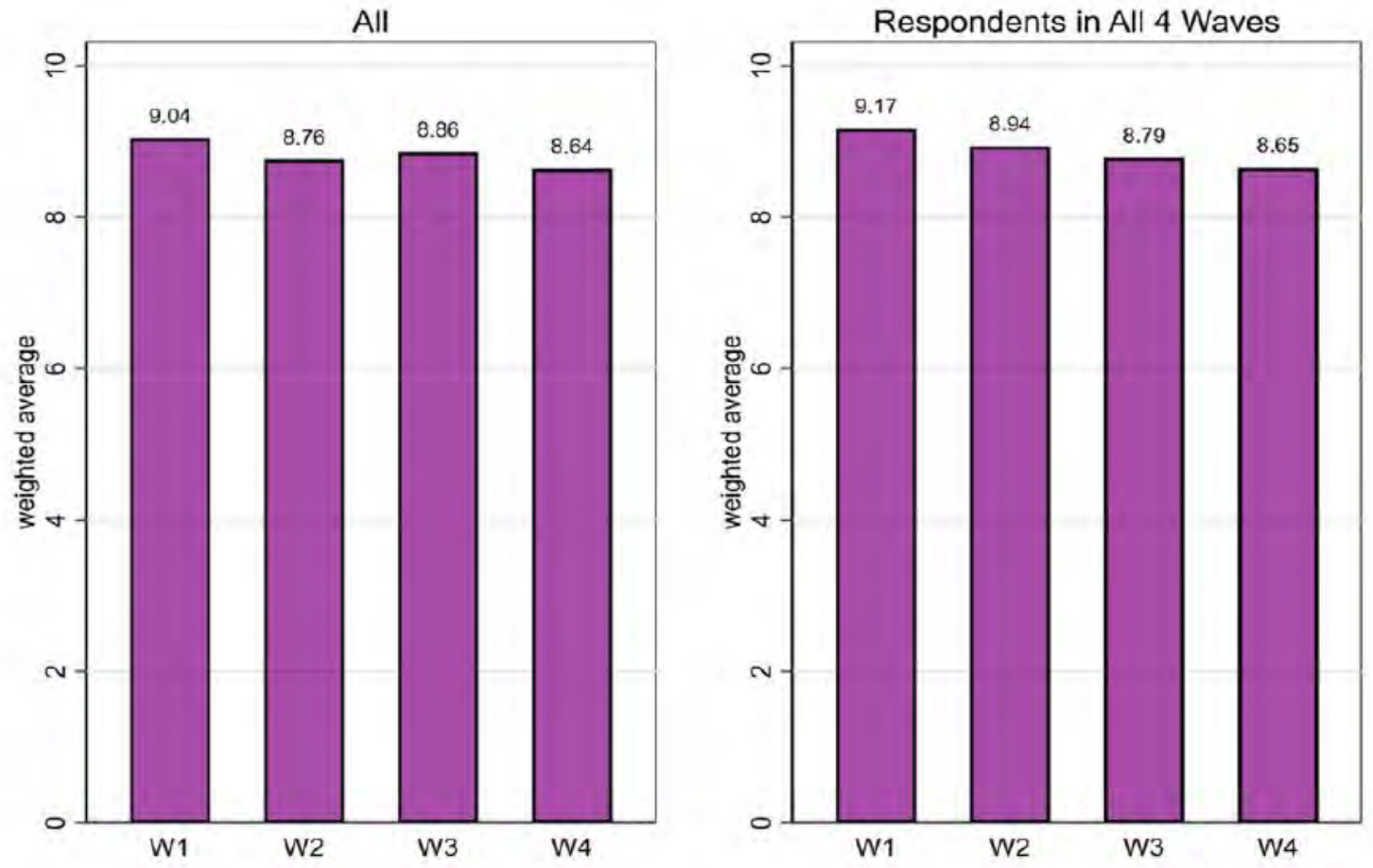


Figure 1. Weighted average total financial literacy score by wave.
Note: The figure shows the weighted average of the total financial literacy score across waves. The left panel includes all UAS respondents who have completed the financial literacy module at least once. The right panel includes only UAS respondents who have completed the financial literacy module in all four waves.

Source: Angrisani and Kapteyn (2024)

Financial literacy results in UAS

- The UAS Big three financial literacy score takes values between 0 and 3. Its weighted average by wave is reported in Figure 7.

- UAS respondents get, on average, about 2.15 questions right out of 3, achieving 72% of the maximum score.

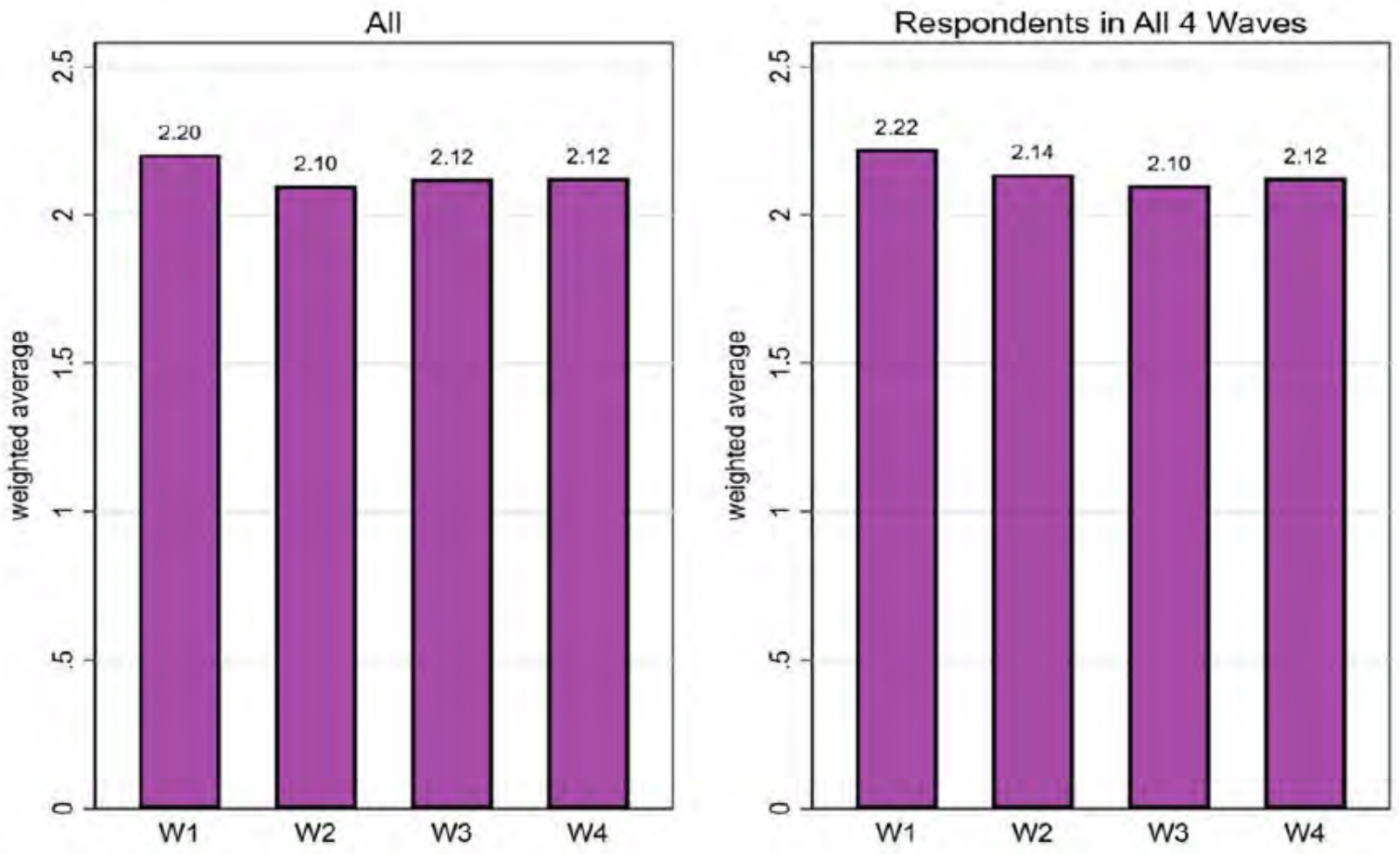


Figure 7. Big Three score across waves.

Note: The figure shows the weighted average of the financial literacy score based on the Big Three questions across waves. The left panel includes all UAS respondents who have completed the financial literacy module at least once. The right panel includes only UAS respondents who have completed the financial literacy module in all four waves. Source: Angrisani and Kapteyn (2024)

Financial literacy results in UAS by gender

Table 3. Weighted proportions of correct and don't know answers to the Big Three by demographics (wave 4 only)

	Interest		Inflation		Risk		Overall	
	Correct	dk	Correct	dk	Correct	dk	3 Correct	≥1 dk
Gender								
Male	87.3	5.1	79.7	7.8	67.8	23.7	57.1	26.7
Female	79.2	8.8	64.3	16.9	47.2	42.9	33.7	46.3

Note: The table reports the weighted proportions of correct and don't know answers to the Big Three questions by demographics in wave 4. dk indicates "don't know" and ≥1 dk indicates at least one don't know answer out of three. Source: Angrisani and Kapteyn (2024)

- By and large, these statistics reproduce the patterns reported by Lusardi and Streeter (2023) using 2021 NFCS data.
- The gender gap in basic financial knowledge is considerable. Female respondents are between 15 and 20 percentage points less likely to provide correct answers than their male counterparts and twice as likely to choose the "don't know" option.

Financial literacy results in UAS by age

Table 3. Weighted proportions of correct and don't know answers to the Big Three by demographics (wave 4 only)

	Interest		Inflation		Risk		Overall	
	Correct	dk	Correct	dk	Correct	dk	3 Correct	≥1 dk
Age (years)								
18–35	77.6	11.0	61.0	20.0	47.0	40.5	33.4	48.6
36–50	83.8	7.0	67.1	13.3	54.1	36.3	42.2	40.5
51–65	85.1	5.4	78.0	8.7	60.8	31.3	50.5	34.4
66+	87.4	3.4	84.7	6.3	70.5	23.5	60.3	26.7

Note: The table reports the weighted proportions of correct and don't know answers to the Big Three questions by demographics in wave 4. dk indicates "don't know" and ≥1 dk indicates at least one don't know answer out of three.

Source: Angrisani and Kapteyn (2024)

- The level of financial literacy appears to be the lowest among individuals aged 18–35 years, increasing monotonically with age. The difference between younger (18–35) and older (66) respondents widens as questions become more difficult/less familiar.
- The gap between these two groups is 10 percentage points for the interest question but more than doubles (23 percentage points) for the inflation and risk diversification questions.

The UAS visualization toolkit

How to explore the UAS data

To explore the UAS data in an interactive manner check out the UAS Visualization Toolkit

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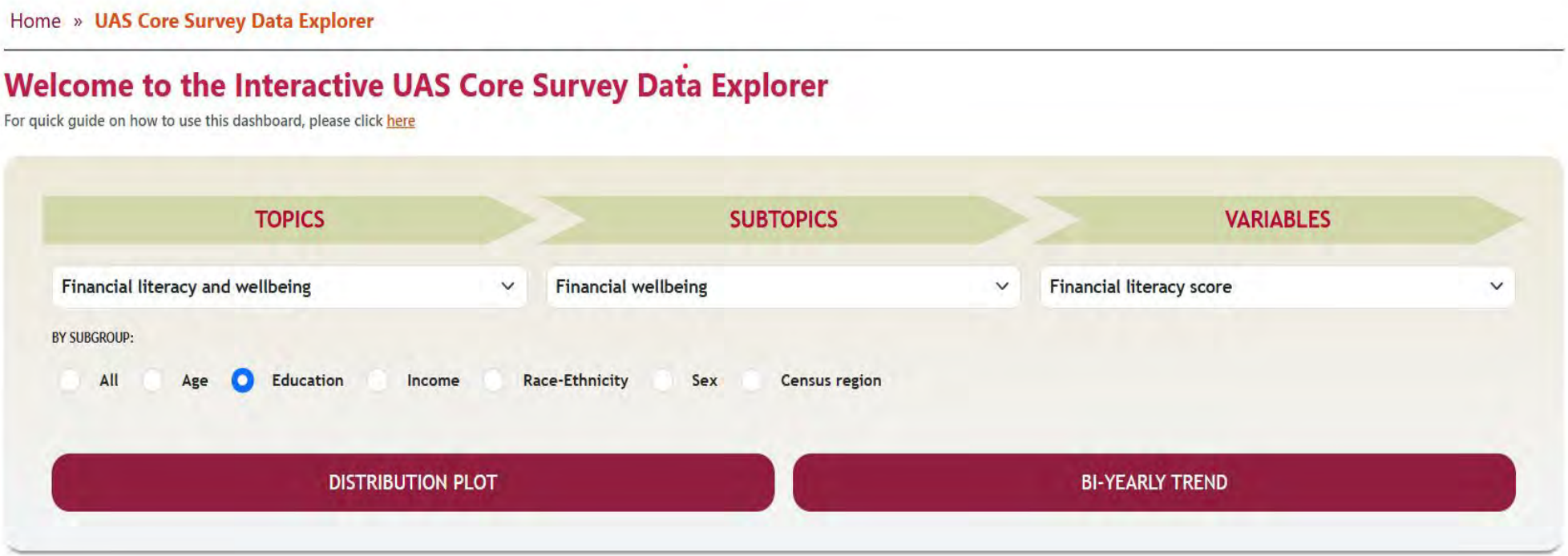
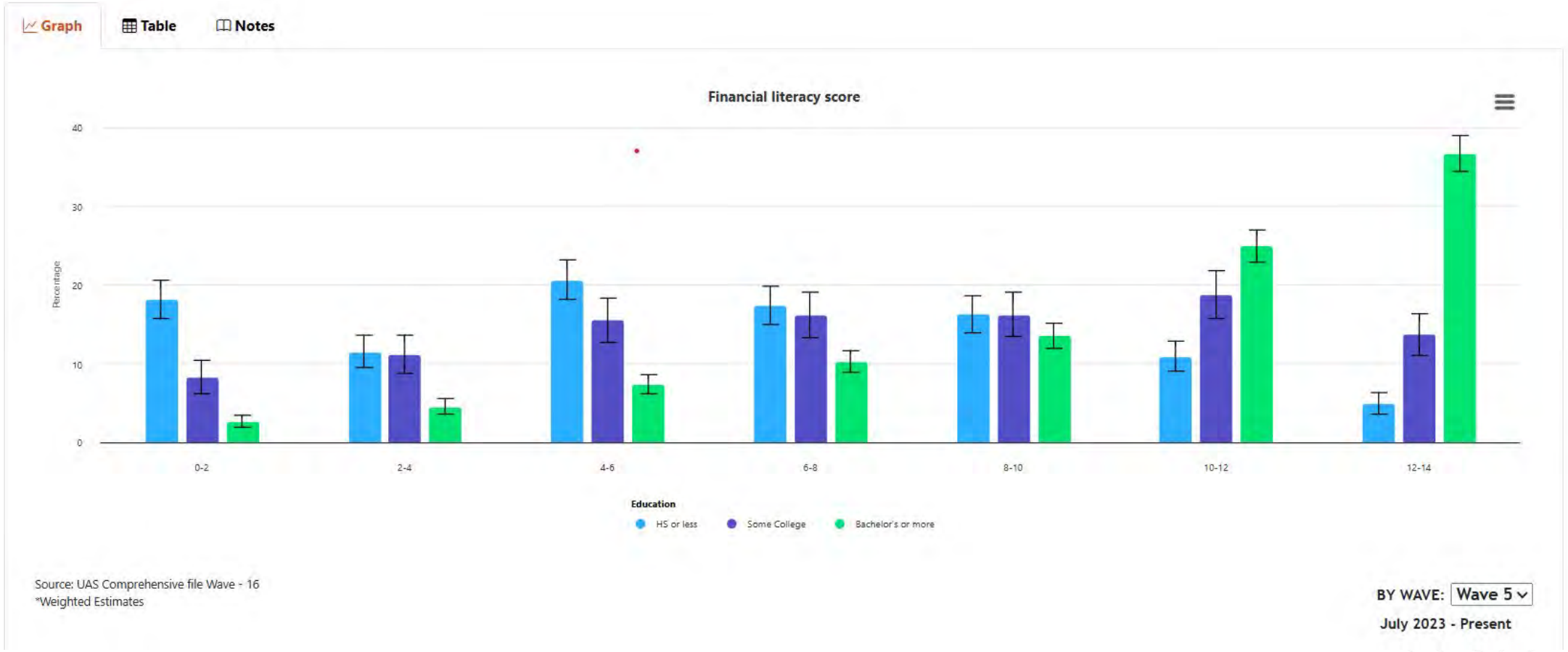


UAS Visualization Toolkit: Example Graphs



UAS Visualization Toolkit: Example Tables

Graph | Table | Notes

Financial literacy score									
Percentage									
Values	HS or less			Some College			Bachelor's or more		
	Average	Lower CI	Upper CI	Average	Lower CI	Upper CI	Average	Lower CI	Upper CI
0-2	18.14	15.71	20.57	8.27	6.15	10.38	2.62	1.87	3.36
2-4	11.55	9.53	13.56	11.22	8.79	13.65	4.53	3.57	5.49
4-6	20.66	18.11	23.21	15.57	12.77	18.37	7.34	6.14	8.53
6-8	17.45	15.05	19.84	16.18	13.34	19.02	10.30	8.89	11.71
8-10	16.28	13.94	18.61	16.24	13.40	19.08	13.54	11.96	15.13
10-12	10.95	8.99	12.91	18.78	15.76	21.80	24.96	22.96	26.96
12-14	4.98	3.61	6.35	13.74	11.08	16.41	36.71	34.48	38.95
Total Sample Size:	1196			1156			3161		

Export table in the following formats: CSV PDF

UAS Visualization Toolkit: Example Tables

Graph | Table | Notes

Financial literacy score									
Percentage									
Values	HS or less			Some College			Bachelor's or more		
	Average	Lower CI	Upper CI	Average	Lower CI	Upper CI	Average	Lower CI	Upper CI
0-2	18.14	15.71	20.57	8.27	6.15	10.38	2.62	1.87	3.36
2-4	11.55	9.53	13.56	11.22	8.79	13.65	4.53	3.57	5.49
4-6	20.66	18.11	23.21	15.57	12.77	18.37	7.34	6.14	8.53
6-8	17.45	15.05	19.84	16.18	13.34	19.02	10.30	8.89	11.71
8-10	16.28	13.94	18.61	16.24	13.40	19.08	13.54	11.96	15.13
10-12	10.95	8.99	12.91	18.78	15.76	21.80	24.96	22.96	26.96
12-14	4.98	3.61	6.35	13.74	11.08	16.41	36.71	34.48	38.95
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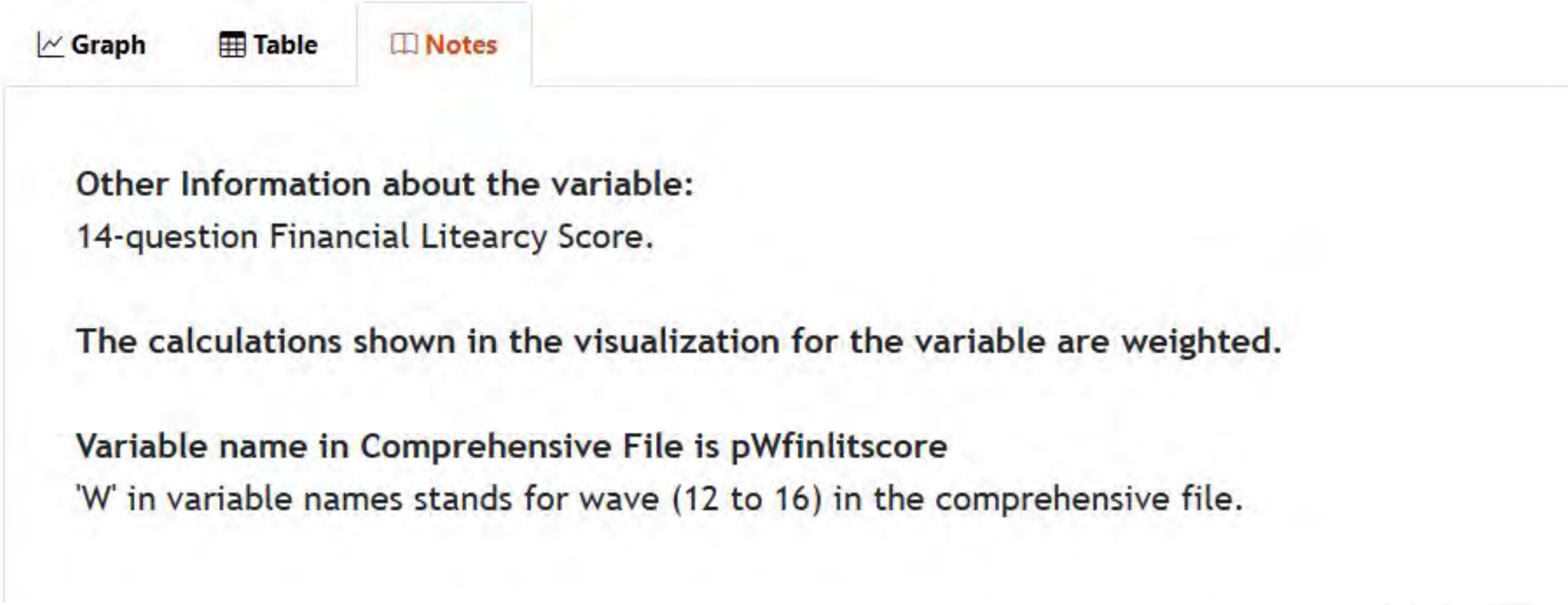
UAS Visualization Toolkit: Example Notes



What is missing? Let’s fill the gaps

If you come up with questions to add and a good proposal, we can provide support to add the questions in the UAS

To sum up

- UAS offers financial literacy and financial outcomes measured longitudinally for all panel members and for as long as they remain in the panel.

- This allows researchers to examine how financial knowledge varies as people age, experience changes in life or cognitive function and track financial wellbeing over time.

- It also offers comprehensive background information for each respondent.

- To control for potential confounders and mitigate omitted variable bias, with the possibility to explore heterogeneity.

- Finally, the UAS offers a dynamic platform where researchers with their own funds can collect data and integrate their own survey questions within an unparalleled, longitudinal, rich dataset.

- This helps in conserving significant time and resources.

Session 5: Financial literacy and financial behavior

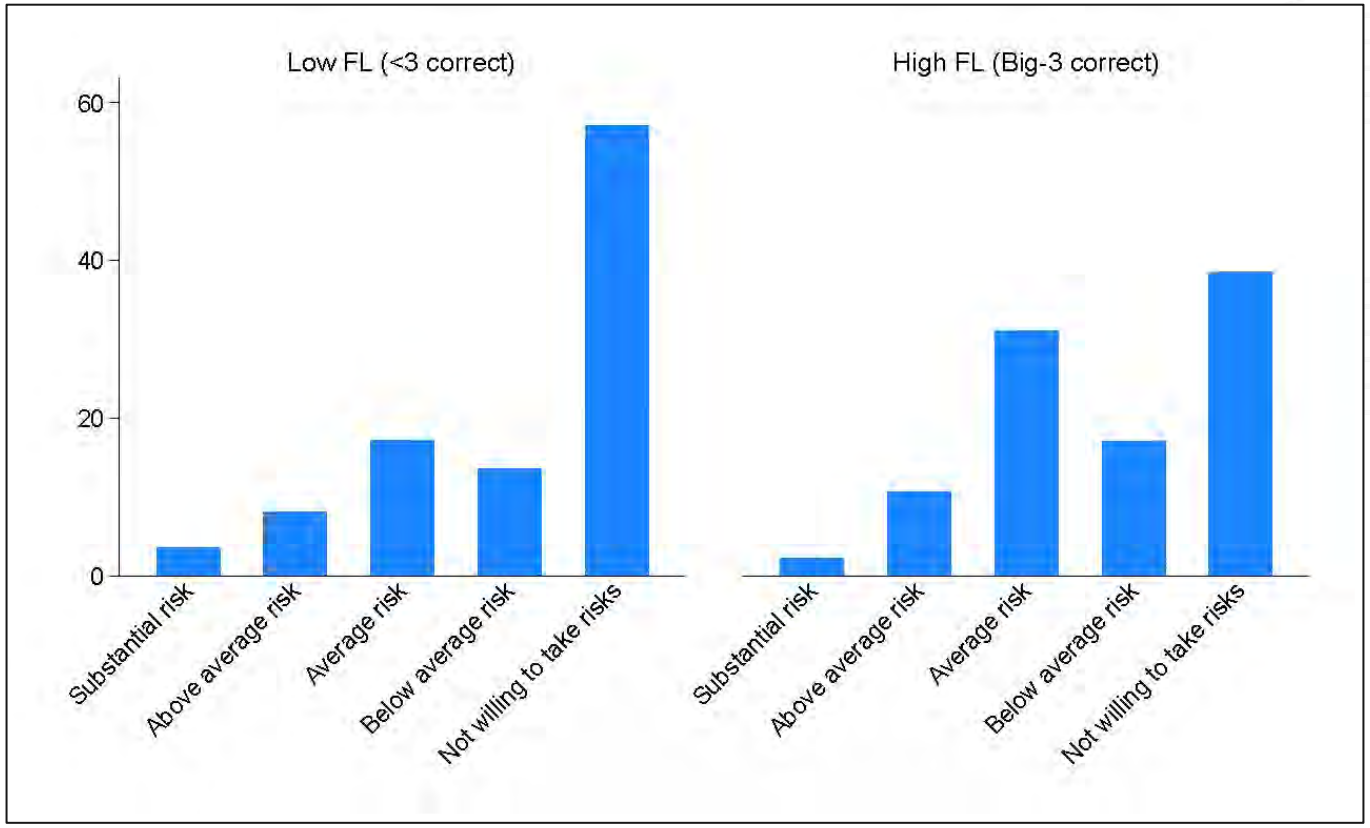
Questions from a personal finance approach

- Can people use their financial literacy in effective ways?
- How do they make financial-decisions?
- Is financial knowledge conducive to behaviors that build financial security?

Risk taking behavior (CES data)

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

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

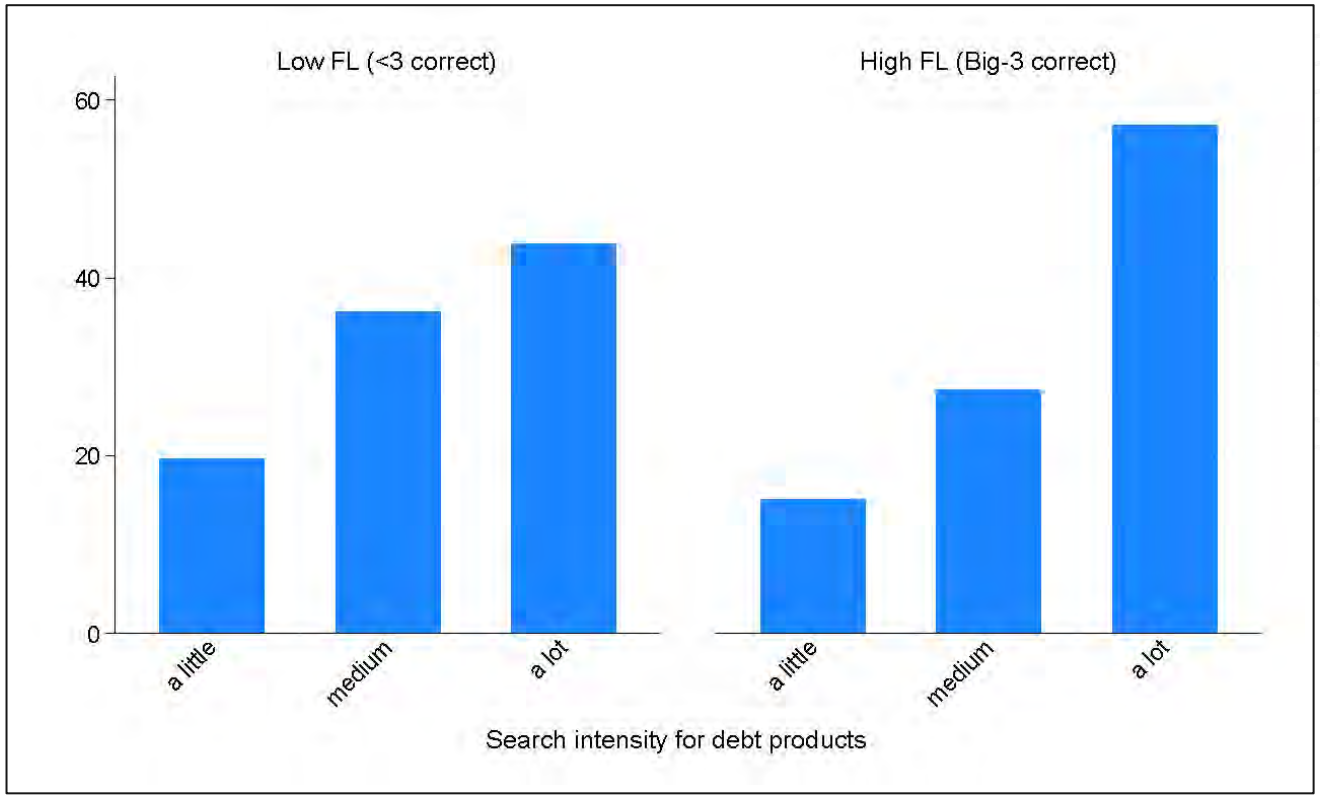


Source: ECB Consumer Expectations Survey, authors' calculations.
Notes: **Which of the following statements comes closest to the amount of financial risk you are willing to take when you save or make investments?** Weighted estimates. Pooled Nov. 2022 and Nov. 2023 data.

Shopping for best debt products

- High FL: more shopping for best debt products

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

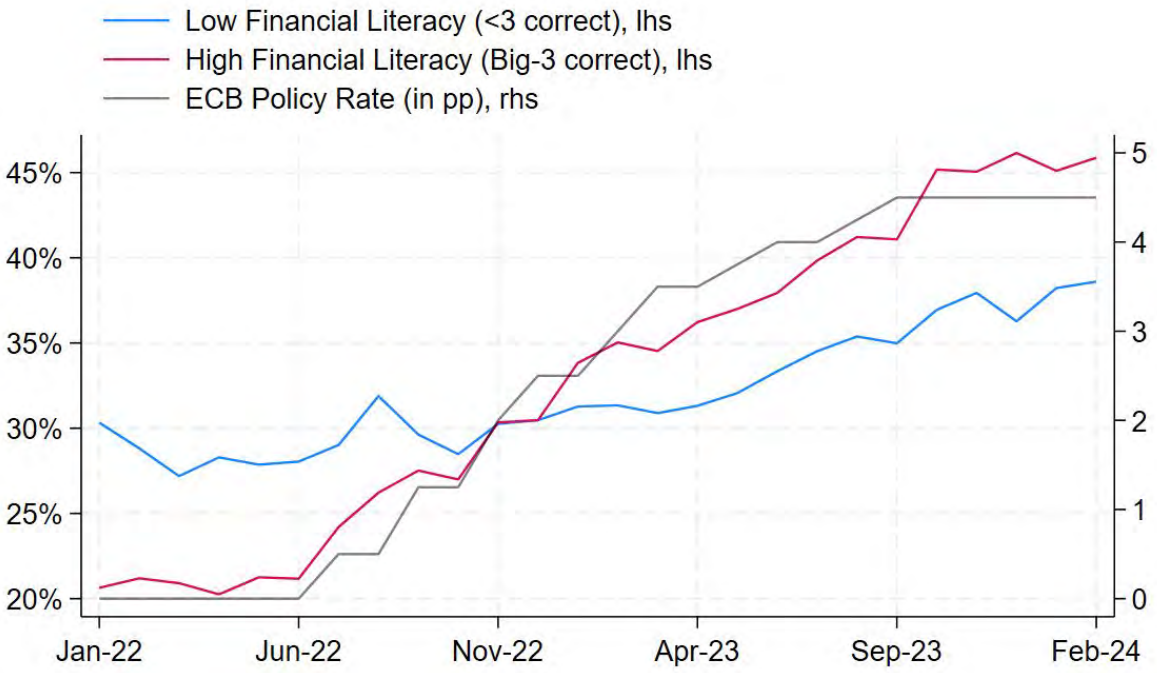


Source: ECB Consumer Expectations Survey, authors' calculations.
Notes: Consumers are asked "**When making major decisions about borrowing money or obtaining credit, some people search for the very best terms while others don't. What best describes you and your household?" on a 11-point-scale from 0 (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.

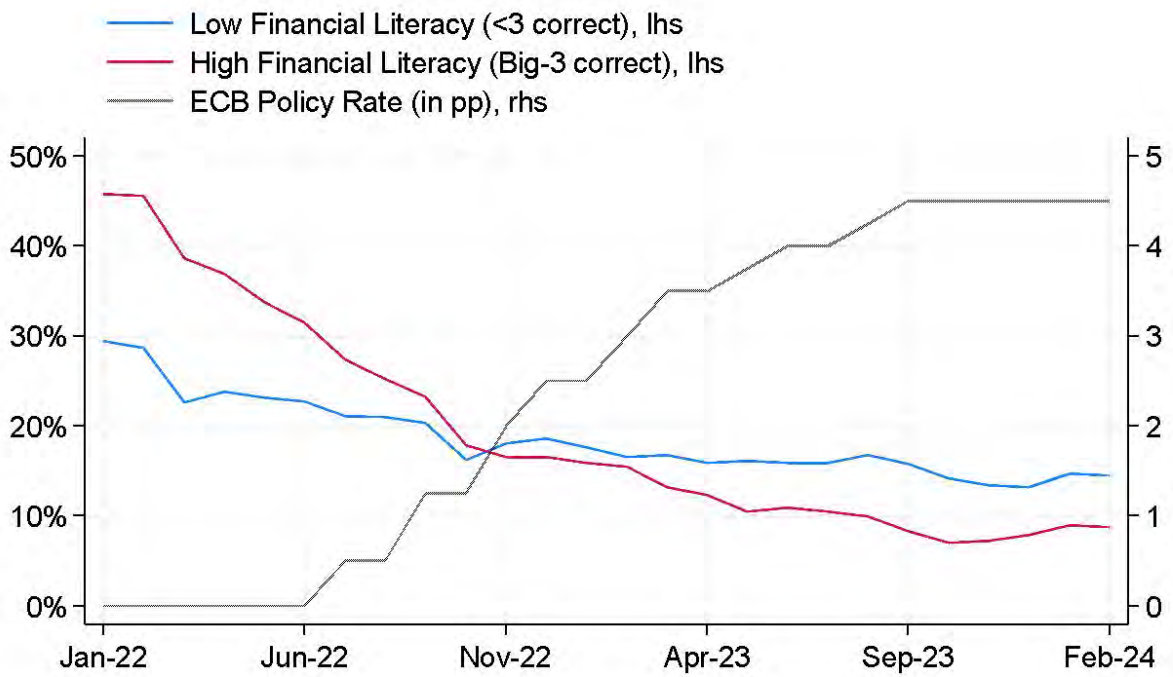
Good time to save and borrow

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

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



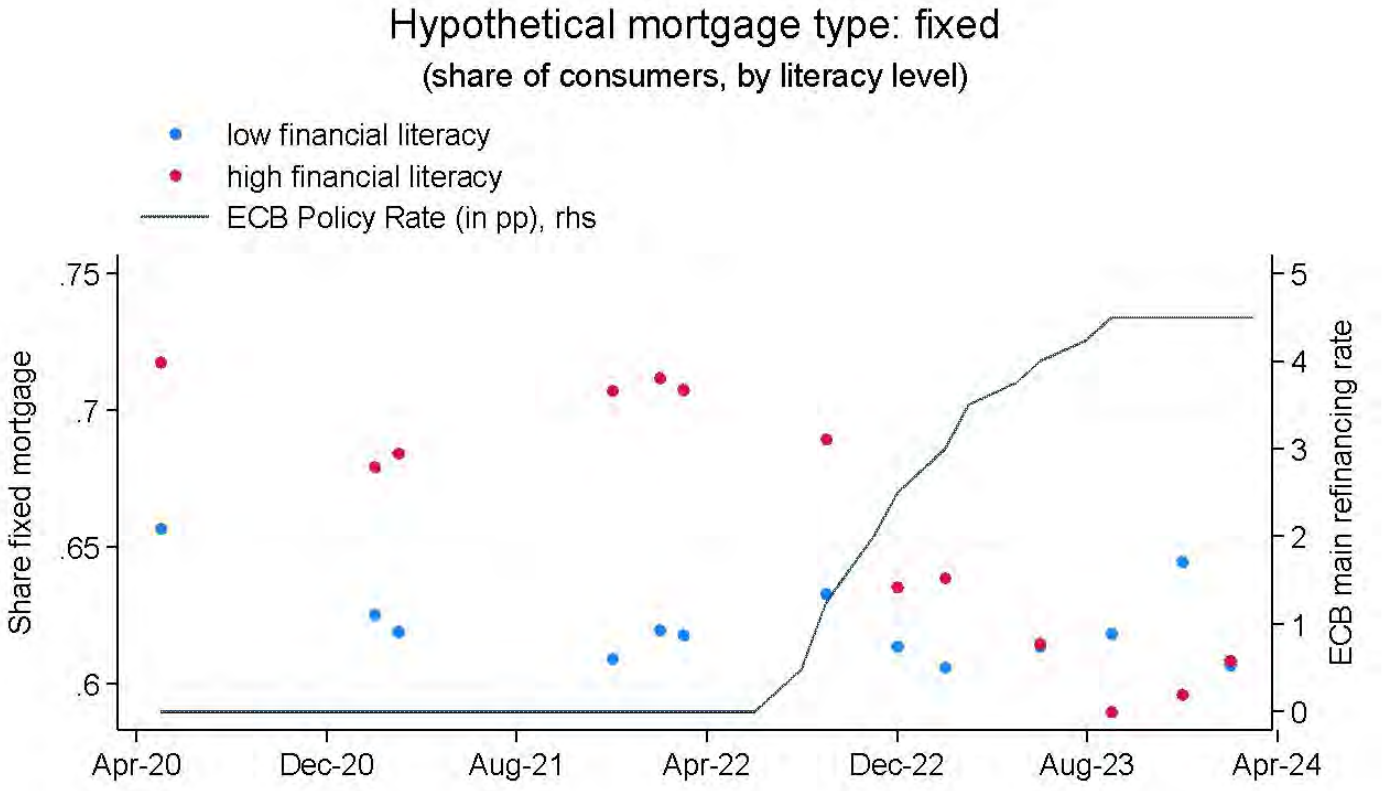
Good time to **borrow** (yes)
(percentage of consumers, by literacy)



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.

FRMs vs ARMs across IR environments

- Low FL: favor FRMs in a high IR environment

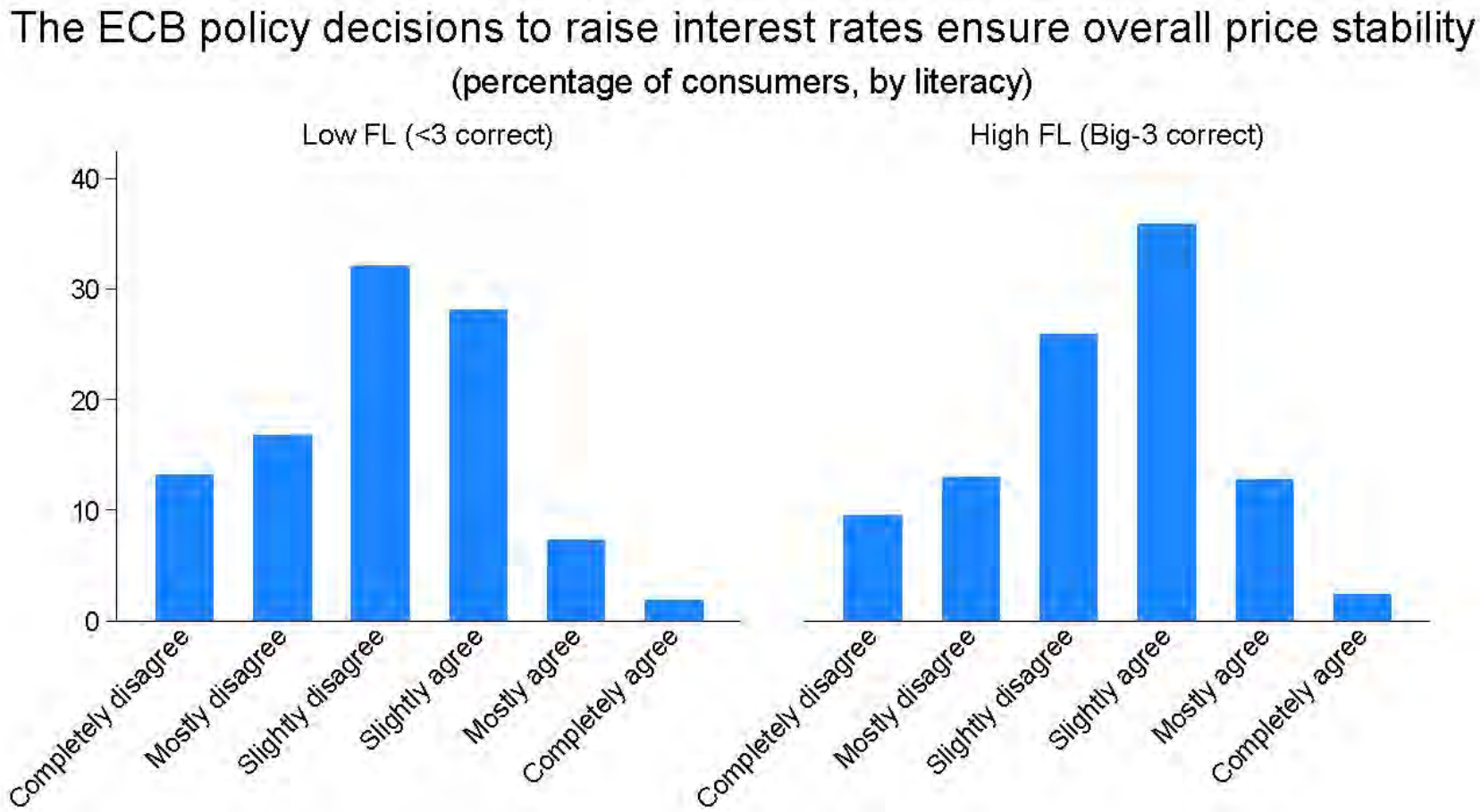


	Fixed mortgage (yes/no)
Big 3 correct	0.08***
	(0.008)
after July 22'	-0.00
	(0.005)
Big 3 correct # after July 22'	-0.08***
	(0.009)
R-2	0.02
N	173,727
Country dummies	Yes

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.

Effectiveness of CB policies

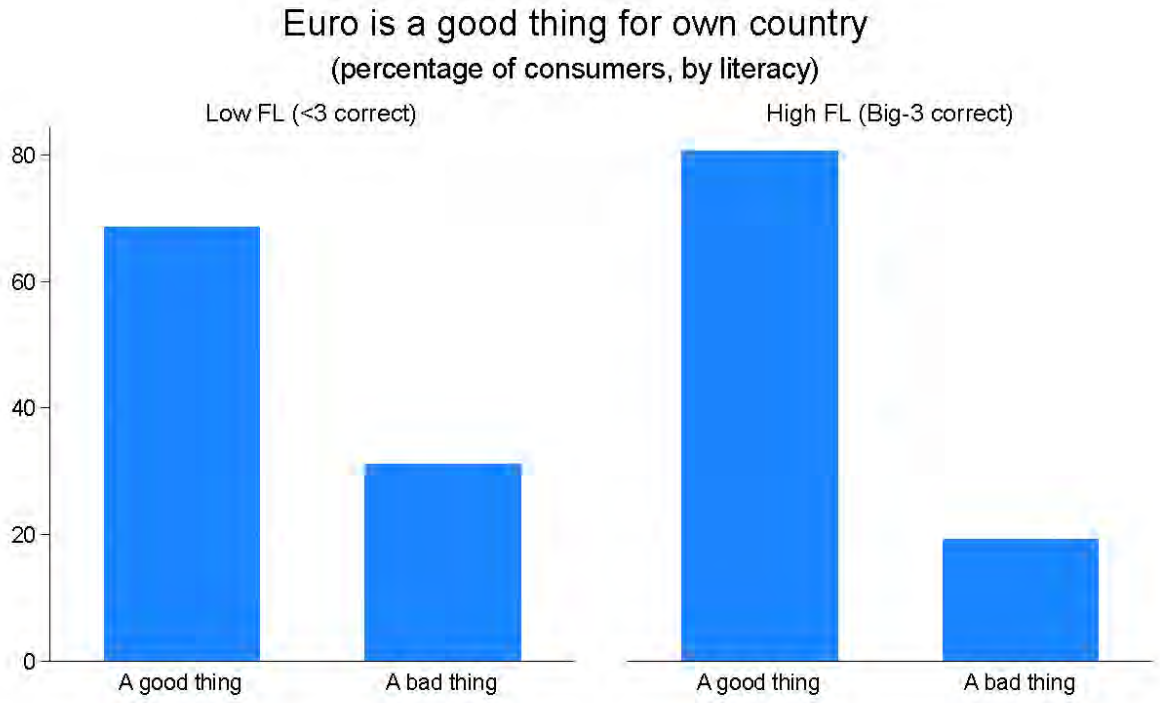
- High FL: more likely to understand CB policies

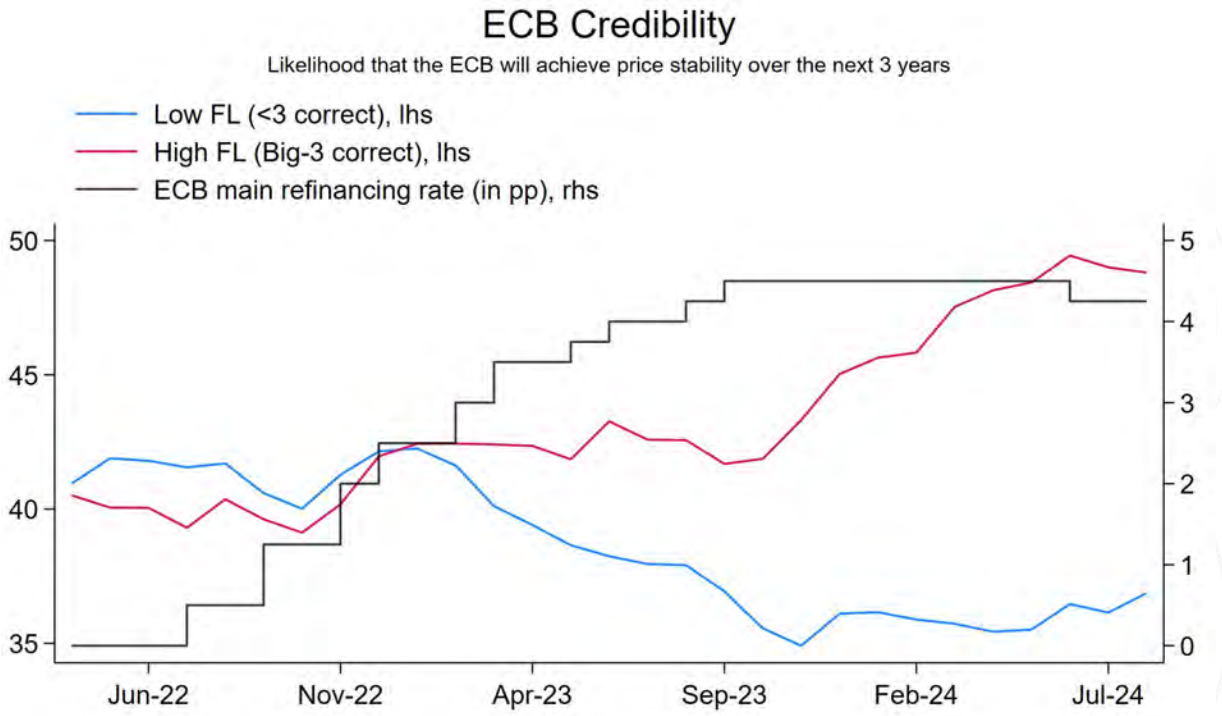


Source: ECB Consumer Expectations Survey. Authors' calculations.
Notes: In March 2023 consumers were asked **how much they agree or disagree with the following statement "*The ECB policy decisions to raise interest rates ensure overall price stability*.". Weighted estimates.

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)

Does financial knowledge affect behaviors?

Financial fragility in America

Long lines at the food banks at the start of the pandemic!

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**?

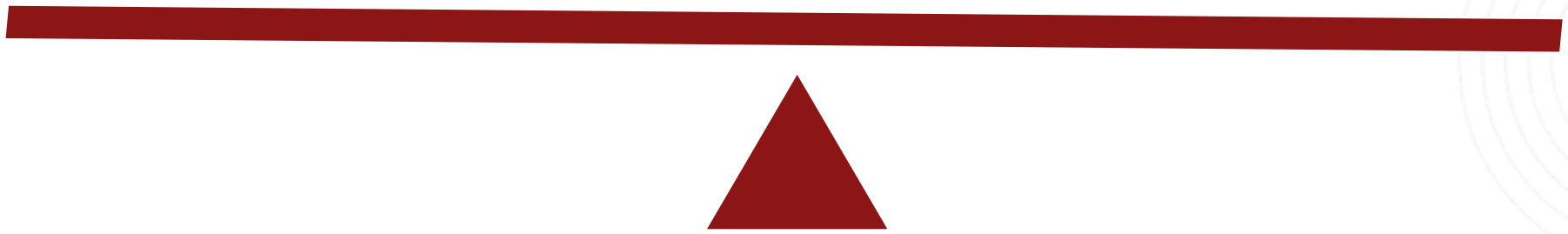
- I am certain I could come up with the full $2,000.
- I could probably come up with $2,000.
- **I could probably not come up with $2,000.**
- **I am certain I could not come up with $2,000.**
- Don’t know.
- Prefer not to say.

Respondents are classified as financially fragile.

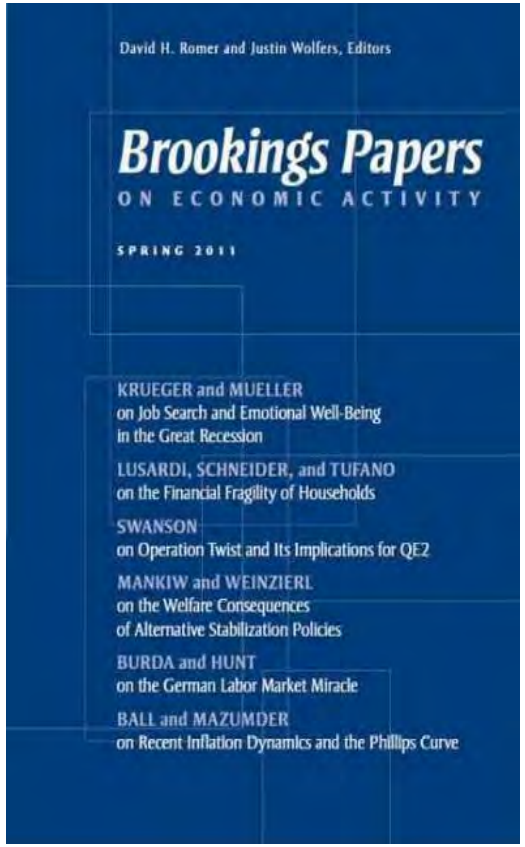
Financial fragility: What does it measure?

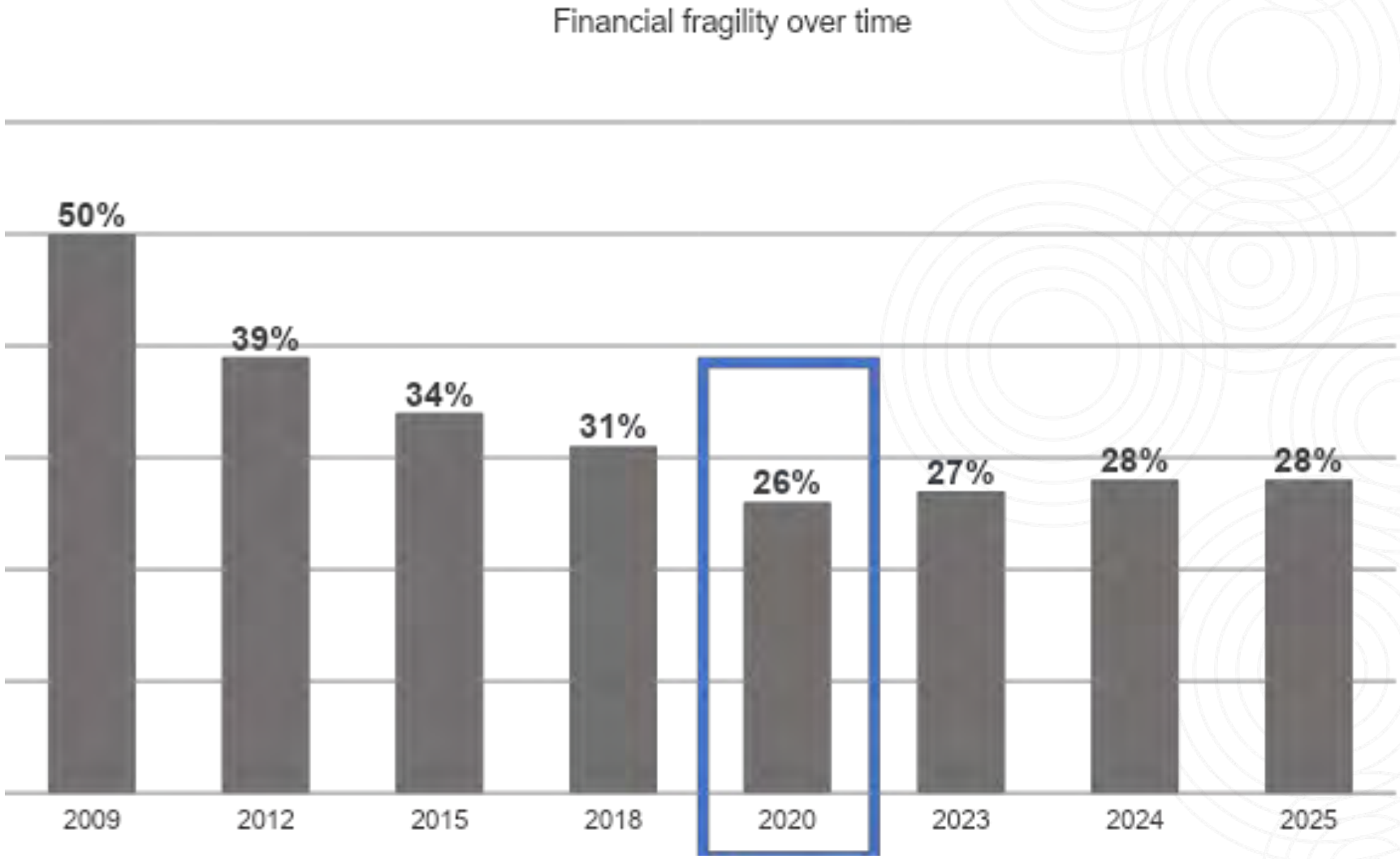
Is a symptom of lack of assets

Indicates lack of borrowing capacity of highly leveraged households



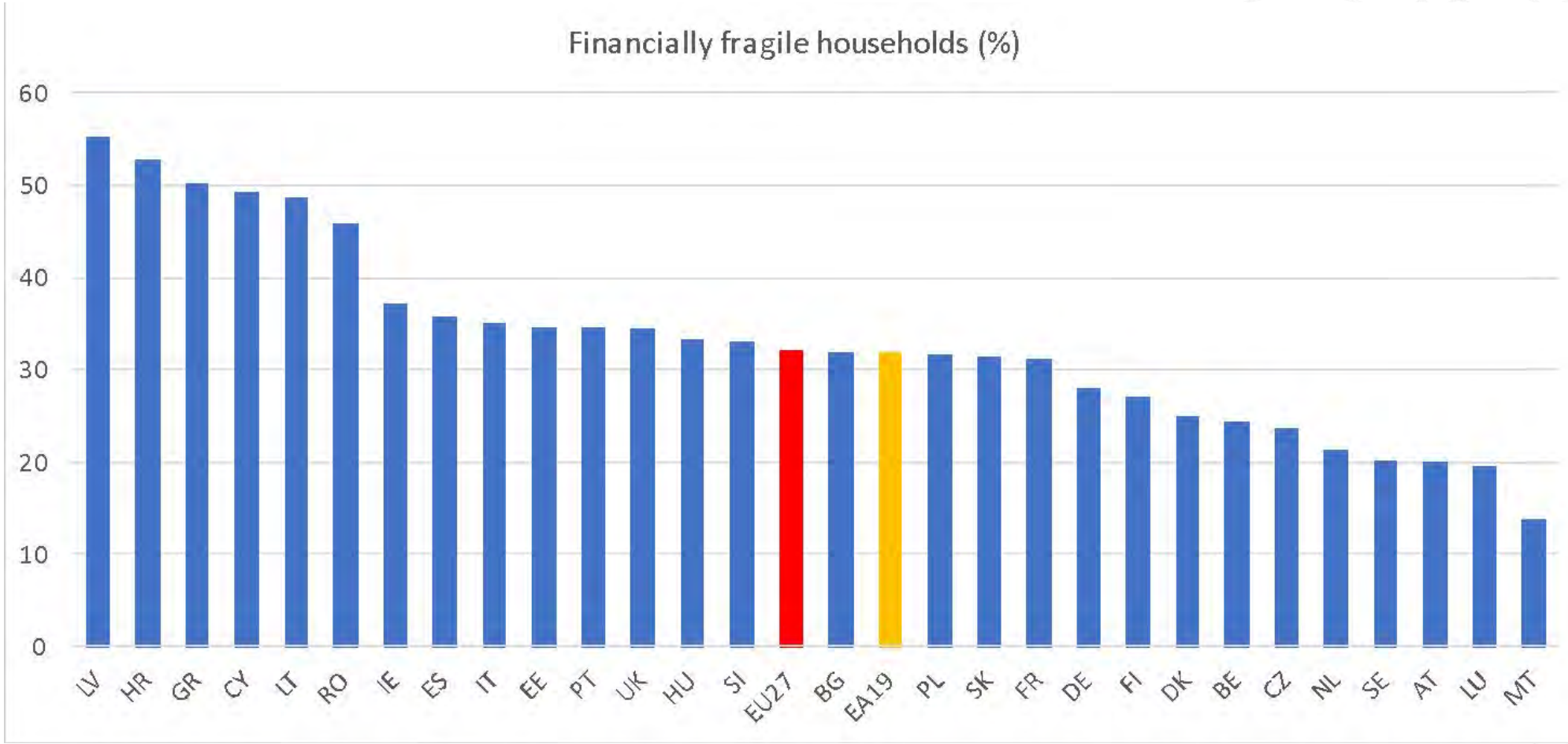
Financial fragility before and after the pandemic





Source: 2009 TNS data; 2012, 2015 and 2018 NFCS data; 2020, 2023, 2024, 2025 P-Fin data.

Similar findings in Europe: 1/3 cannot face a shock (Demertzis, Domínguez-Jiménez and Lusardi, 2020)

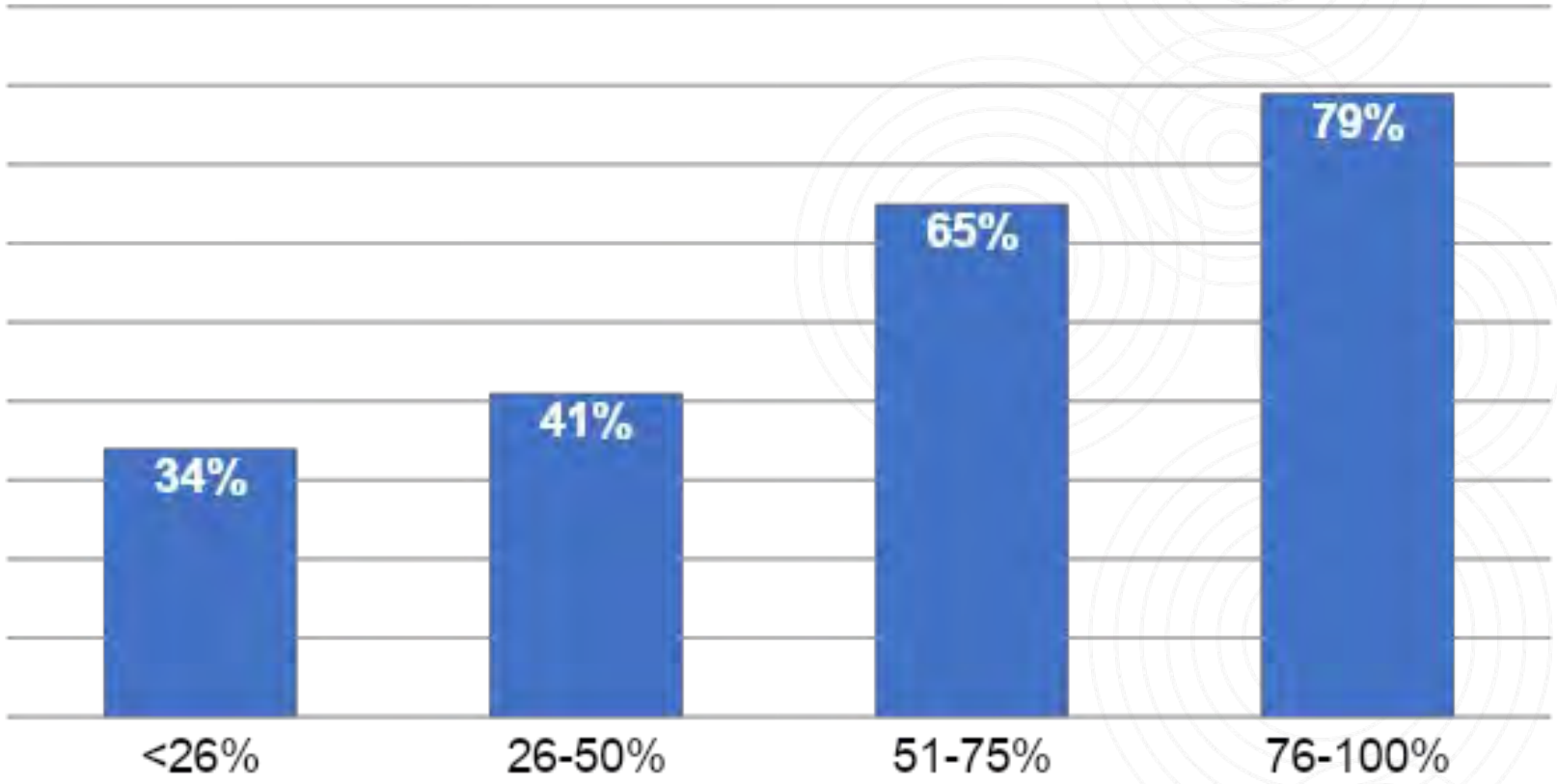


Source: EU-SILC 2018

Financial literacy and financial fragility

Those with greater financial literacy are less likely to be financially fragile.

% who could certainly come up with $2,000 if an unexpected need arose within the next month



Source: TIAA Institute-GFLEC Personal Finance Index (2025).

The relationship between financial resilience (being able to cope) and financial literacy in 2025

	Model 1 *Financial Resilience*	**Model 2** *Financial Resilience*	**Model 3** *Financial Resilience*
>50% of P-Fin questions correct	0.085***		
	(0.019)		
Total # of P-Fin questions correct		0.007***	
		(0.001)	
Was offered financial education			0.045***
			(0.017)
Demographic Controls	Yes	Yes	Yes
Observations	3,104	3,104	3,104
R-squared	0.142	0.144	0.138

Source: TIAA Institute-GFLEC Personal Finance Index (2025).

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journal homepage: www.elsevier.com/locate/jaccpubpol

Full length article

Resilience and wellbeing in the midst of the COVID-19 pandemic: The role of financial literacy

Andrea Hasler [a], Annamaria Lusardi [b,*], Nikhil Yagnik [c,1], Paul Yakoboski [d]

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ABSTRACT

Using the 2021 wave of the TIAA Institute-GFLEC Personal Finance Index (*P-Fin Index*), this paper provides an in-depth examination of the financial literacy of U.S. adults in the midst of the COVID-19 pandemic. Knowledge is troublingly low, with U.S. adults averaging a score of 50 percent on the twenty-eight questions that compose the *P-Fin Index*. Even more disturbingly, only 28 percent of U.S. adults correctly answered a question testing their ability to comprehend and compare probabilities. Financial literacy matters. Lower financial literacy is associated with increased time spent worrying about personal finances. After controlling for income, education, and key demographic information, the more financially literate are found to be more likely to be financially resilient, to plan for retirement, and to feel unconstrained by debt. These findings highlight the importance of financial knowledge, in particular in a time of crisis, and raise concerns about the public's ability to comprehend complex messages about risk during the pandemic.

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Robustness checks

- Similar results using different measures of precautionary savings
- Instrumenting for financial literacy tend to give even higher estimates than the OLS
- Relationship on financial literacy and financial fragility also holds at the macro level (use aggregated data across countries)

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***	-0.06***	-0.04***	-0.05***	-0.02***	-0.05***	-0.02***	-0.06***
	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(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.

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.

Financial literacy and financial behavior

Financially literate individuals:

- are better prepared to cope with shocks
- are better at managing debt
- are more likely to invest in financial markets
- are more likely to plan for retirement

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)

Estimating the effects of financial literacy

- Instrumental variables (IV) estimation
  - Hard to find good instruments
  - The IV estimates are always greater than the OLS estimates

- Example of IV estimates
  - School mandates
  - Being exposed to financial education in school or the workplace
  - Financial situation of oldest sibling
  - Parents understanding of financial matters

Experiments are the best way to assess effects of finlit/finedu

- Can address causality
  - Hard to find good instruments

- Can better control for many factors
  - Can do in labs
  - Often too much heterogeneity in the data

But tend to be expensive to do and also complex

JEP paper summarizes the research in the past 20 years

Annamaria Lusardi and Olivia S. Mitchell

Journal of Economic Perspectives

Fall 2023

Journal of Economic Perspectives—Volume 37, Number 4—Fall 2023—Pages 137–154

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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For supplementary materials such as appendices, datasets, and author disclosure statements, see the article page at https://doi.org/10.1257/jep.37.4.137.

Recent studies on financial literacy using UAS data

RCT from UAS data (Clark et al., 2025)

- Innovative short online and scalable financial education program, similar to Lusardi et al. (2014) and Lusardi et al. (2015), with some implications for financial behavior.

Story 1 is about "compound interest".

It is a story about a young couple making saving decisions.
It teaches the "Rule of 72" which is a simple way to help people calculate how many years it takes for an amount to double given a specific interest rate.

Story 2 is about "risk diversification"

It is a story about a couple discussing investment.
It teaches people the adage "do not put all of your eggs in one basket".

Story 3 is about "inflation"

It is a story about two friend discussing shopping.
It teaches people that prices increase overtime and that we have to take inflation into account in our decisions.

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journal homepage: www.elsevier.com/locate/jebo

Research Paper

Evaluating the effects of a low-cost, online financial education program☆

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ABSTRACT

We provide evidence on how a low-cost, online, and scalable financial education program influences older participants' financial knowledge. We test the program using a field experiment that includes short stories covering three fundamental financial education topics: compound interest, risk diversification, and inflation. Two surveys are administered eight months apart to measure the effects of those stories on middle-aged and older (45+) participants' short-term and longer-term knowledge and financial behavior. We show that the risk diversification story is the most effective at improving participants' knowledge, in both the short and longer terms. In the short term, reading the risk diversification story significantly increased the likelihood of correctly answering the related knowledge questions by 17–18 percentage points. The compound interest and inflation stories significantly increase participant knowledge in the short term, but the gain in financial literacy declines over time. Furthermore, timestamp data was used to show that the inflation story increased the time participants spent answering the related knowledge questions suggesting that exposure to our story boosted participants' attentiveness and interest in the topic. Over just an eight-month time period, the stories do not seem to have a significant effect on financial behaviors as measured by four financial distress indicators and a financial resilience index. Nevertheless, higher financial literacy is positively linked to better financial decision-making. The eight months might be too short to measure significant behavioral change; thus, further research is needed to prove the intervention's effect on financial behavior in the long run.

Evidence from UAS data (Clark et al., 2025)

- Someone who correctly answered all three questions was 11.4 p.p. less likely to be financially fragile, compared to a respondent who missed at least one question.
- Getting all three financial literacy questions correct also reduced the probability of reporting having too much debt, being financially dissatisfied, and having difficulty making ends (by 9.9, 4.7, and 11.8 p.p., respectively).
- Thus, financial literacy was strongly inversely related to people's financial distress outcomes pre-intervention, consistent with prior literature.

Table 9. How financial literacy influences financial distress indicators and resilience index

	(1) Financial fragility	(2) Over-indebtedness	(3) Financial dissatisfaction	(4) Difficult ends meet	(5) Financial Resilience Index
Financial literacy	−0.114***	−0.099***	−0.047**	−0.118***	0.306***
	(0.018)	(0.019)	(0.019)	(0.022)	(0.068)
Constant	0.213***	0.260***	0.187***	0.348***	4.233***
	(0.029)	(0.032)	(0.029)	(0.033)	(0.105)
Observations	2122	2184	2212	2218	2218
R squared	.243	.106	.117	.157	.076

Financial literacy and stock market (Van Rooij et al., 2011)

- They used two special modules for the DNB (De Nederlandsche Bank) Household Survey (DHS), a panel data set covering a representative sample of the Dutch population and providing information on savings and portfolio choice.

- Financial literacy affects financial decision-making: Those with low literacy are more likely to rely on family and friends as their main source of financial advice. Most importantly, low-literacy individuals are less likely to invest in stocks.

Journal of Financial Economics 101 (2011) 449–472

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Financial literacy and stock market participation ☆

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Portfolio choice
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Risk diversification
Learning from peers

ABSTRACT

We have devised two special modules for De Nederlandsche Bank (DNB) Household Survey to measure financial literacy and study its relationship to stock market participation. We find that the majority of respondents display basic financial knowledge and have some grasp of concepts such as interest compounding, inflation, and the time value of money. However, very few go beyond these basic concepts; many respondents do not know the difference between bonds and stocks, the relationship between bond prices and interest rates, and the basics of risk diversification. Most importantly, we find that financial literacy affects financial decision-making: Those with low literacy are much less likely to invest in stocks.

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Financial literacy and stock market (Van Rooij et al., 2011)

- Both the OLS and GMM estimates of financial literacy remain positive, statistically significant, and do not change appreciably in magnitude.

- *the reference group consists of those respondents who exhibit the highest degree of risk aversion, those respondents whose oldest sibling is in better financial condition and parents with the lowest understanding of financial matters (GMM (2)).

	OLS		GMM (1)		GMM (2)	
Advanced literacy index	0.0915***	(0.0145)	0.233*	(0.130)	0.188**	(0.0897)
Demographics and other control variables (see Table 7)	Yes	Yes	Yes	Yes	Yes	Yes
Observations		888		837		837
R-squared		0.138		0.090		0.120
p-Value test risk aversion coefficients=0		0.736		0.741		0.762
Hansen *J*-test *p*-value				0.0204		0.0879
F-statistic first-stage regression				12.72		9.114
p-Value exogeneity test				0.324		0.289

Note: Robust standard errors in parentheses; ***$p<0.01$, **$p<0.05$, *$p<0.1$.

Translating research into action

We need large and scalable programs

- Financial education in school
- Financial wellness programs in the workplace
- Financial education in the community (media, libraries, museums, theaters, churches, town halls, or other places where people go to learn)

Fireside Chat: “Teaching Personal Finance at Stanford”

Session 6: Teaching Personal Finance

Personal finance courses at GW

- At the George Washington University, we first started a course on personal finance for graduate students in accountancy
- The course was extended to all undergraduates in the honors program
- It is now taught in the Economics department and it is a general education course, so everyone can attend

Personal finance courses at Stanford

- We have many student athletes at Stanford
- They are the best ambassadors for financial literacy

We published a paper on NFL Players

Bankruptcy Rates among NFL Players with Short-Lived Income Spikes†

By Kyle Carlson, Joshua Kim, Annamaria Lusardi, and Colin F. Camerer*

One of the central predictions of the life-cycle hypothesis is that individuals smooth consumption over their economic life cycle; thus, they save when income is high to provide for when income is likely to be low, such as after retirement.

We test for consumption smoothing in a group of people whose income profile does not just gradually rise then fall, as it does for most workers, but rather has a very large spike lasting only a few years. These people are players in the National Football League (NFL). A career lasting six years (the median length) will provide an NFL player with more earnings than an average college graduate will get in an entire lifetime, plus a modest pension (Figure 1). However, earnings are risky because an injury can cut a player's career short. Even healthy players' careers usually end by their mid-30s. Players' typical post-retirement income is much lower than the income they earn while playing, and NFL retirement benefits are modest (Weir, Jackson, and Sonnega 2009). These features of income level and uncertainty are presumably known to players. To maintain a smooth level of consumption after the predictable post-NFL income drop, a rational, patient player should therefore save a large portion of his NFL earnings and enter retirement with a high net worth.

It is difficult to measure the ups and downs of the consumption and wealth of NFL players. Therefore, to test whether NFL players have adequate savings we measure how many retired NFL players file for bankruptcy.

In simulations not reported here, benchmark forecasts of optimally-saving individuals with income spikes, calibrated to what the NFL players actually earn, yield essentially no simulated bankruptcies (based on Livshits, MacGee, and Tertilt 2007). However, NFL players may not save enough because of optimism about career length, poor financial decisions, or social pressures to spend (factors we will consider in ongoing work).

Indeed, we find that initial bankruptcy filings begin to occur very soon after retirement and continue at a substantial rate through at least the first 12 years of retirement.

I. Data Sources

We collected data on all players drafted by NFL teams from 1996 to 2003 ($N = 2{,}016$).[1] NFL players are public figures so information about them is available from many sources. We used pro-football-reference.com and NFL.com to obtain basic information, including full name, career length, date of birth, hometown, and college. Annual NFL salary information

Personal finance topics we cover in our courses

1. The basics of personal finance
2. Accounting for households
3. Life-cycle model of saving under uncertainty
4. Debt management
5. FICO score and its determinants

Personal finance topics we cover in our courses, cont.

Teaching personal finance

- There is a sequence for the topics to cover, not just in terms of complexity but also on how people should consider their personal finance decisions
- Personal finance is NOT just about investing

- It is an Economics course and a better introduction to Economics than Econ 1

- Over time we have added more topics or cover topics with different attention. For example, we have added negotiation. We focus a lot more on insurance and also venture capital and private equity.
- I want to add more case studies, applications and story-telling

Each lecture

- Has statistics from the P-Fin Index

- Has graphs from FRED - We have a collaboration with the FRED team and we will jointly create resources for teaching
- Use a story

- Has a video at the end.
- In one course, I required students to write on a diary each week

Promoting personal finance courses at other universities/colleges

Sharing with a rapidly growing group of academics who are teaching personal finance. We are now working on developing a curriculum for high school students and a training program for high school teachers

Stanford | Initiative for Financial Decision-Making

On-going projects on assessing the impact of financial education in college

Mapping personal finance education across U.S. colleges

- Large-scale data collection effort to collect information on personal finance courses
- Understand both the demand and supply of financial education at higher-education institutions

The impact of college personal finance education

- Multi-institutional study (UNLV, CSU Northridge, Cal State Fullerton) on the effectiveness of college-level personal finance education in enhancing students' financial knowledge and promoting positive financial behaviors.
- More than 6000 students involved in the study
- Multiple data sources used, including Credit Bureau Reports from Equifax

The Impact of College Personal Finance Education: A Scalable Evaluation Framework

Hakan Ozyilmaz
Stanford University

Motivation

- Financial literacy among college students is particularly low (Lusardi and Mitchell, 2023)

- This is in contrast to an increase in the need for financial literacy
  - Increasing complexity in financial markets and delegation to consumers
  - Firms do not have incentives to educate consumers
  - Regulation alone is not sufficient

- How does financial education influence their knowledge, beliefs and behavior?
  - We know that financial education influences knowledge and behaviors (Kaiser et al. 2022)
  - Less is known about the mechanisms that generate positive financial behaviors

Research Questions

- How does financial education influence key mechanisms?
  - **Beliefs:** What are their priors on crucial economic variables? Do they even have proper expectations?
  - **Search behavior:** How do they search for financial information?
  - **Endogenous learning:** Do they seek further education or advice?

- How do these mechanisms ultimately influence their savings and borrowing behavior?

- Who benefits the most? Are existing gaps in financial literacy across demographics attenuated or amplified?

- We conduct a multi-campus field experiment to answer these questions

What We Do

- We develop an enhanced financial education curriculum that aims to
  - Increase foundational financial knowledge
  - Improve how individuals search, collect and analyze financial information

- Test the effectiveness of the enhanced curriculum against a descriptive curriculum experimentally
  - Combine surveys, academic records and credit bureau data to get a complete understanding of students' personal finances over three years

- Use quasi-experimental methods to understand the effect of taking any personal finance course
  - Difference-in-difference with placebo courses (principles of microeconomics)

Personal Finance Courses

	University of Nevada Las Vegas	CSU Northridge	CSU Fullerton
Number of Students	2400	600	980
Online	1400	400	210
In-class	1000	200	770
Department	Finance	Finance, Financial Planning and Insurance	Finance
Term Structure	Semester	Semester	Semester
Instructors	Full-time faculty, Adjunct Faculty, Professionals	Full-time faculty, Adjunct Professors	Full-time faculty, Adjunct Professors
Number of Lecture Hours	38.5	38.5	38.5
Credits counts towards	General Education - Analytical Reasoning	General Education – Lifelong Learning	GE Mathematics and Quant Reasoning
Prerequisite	No	No	No

Treatment Assignment

- We randomize existing sections into treatment arms (Enhanced and Descriptive)
- Block randomize where each block is a Term x University x Delivery Mode

	Fall	Spring	Average Section Size	Instructors
UN Las Vegas	22 sections: 13 online and 9 in-person	19 sections: 12 online and 7 in-person	50	14
CSU Northridge	5 sections: 3 online and 2 in-person	3 sections: 2 online and 1 in-person	50	3
CSU Fullerton	14 sections: 3 online and 11 in-person	14 sections: 3 online and 11 in-person	35	9
Total	41 sections: 19 online and 22 in-person	36 sections: 17 online and 19 in-person		26

Experimental Design

- Recruit students enrolled in personal finance and placebo courses (principles of microeconomics)
  - Active financial lives and most work part-time
  - Diverse student body

- We conduct 5 rounds of surveys – each lasting approximately 20 minutes
  - Two baseline, one endline, two follow-ups
  - Financial knowledge and behaviors
  - Preference measurement tasks

- Use academic records of the students
  - Rich demographic data, majors, courses taken, grades, graduation outcomes

- Equifax provides access to anonymized credit bureau (merged with the survey data)

Descriptive vs Enhanced Curriculum

- Most financial education is descriptive and is conducted in a passive learning environment

- Enhanced curriculum adds to the existing curriculum of each collaborating university
  - The syllabi and grading criteria are homogenized
  - Enhanced curriculum incentivizes students to complete the online exercises

- We create a set of exercises that encourages deliberation
  - An online game where the student acts as a loan officer whose incentives misalign with the students
  - A game where the students predict and track their spending
  - AI chatbots that support goal-setting and budgeting

Concluding Remarks

- We build a research design that can be extended and replicated:
  - **Curriculum design**: Enhanced vs. descriptive
  - **Randomized rollout** within large, existing courses
  - **Rich outcomes**: Surveys, transcript data, credit bureau data
  - **Quasi-experimental variation**: Difference-in-differences with placebo courses

- Talk to us if you are considering developing a financial education intervention,
- Or better teaching a personal finance course

Why Study Financial Education in Colleges?

- Demand for adult financial education is low
- Low uptake of financial education interventions limit our understanding of the impact of financial education
- Colleges offer a natural testing ground for financial education
  - Laboratory like environment – better identification of mechanisms
  - Rich administrative data available through academic records
  - Easy to access an adult population for early career researchers
  - Existing infrastructure for recruitment and communication

Why This Model is Scalable

- Personal finance courses exist across many campuses
- Our intervention is designed as supplementary to the main curriculum
  - Reduces the burden on instructors
- For online courses, individual-level randomization could be feasible
- Evaluation can be modular: light-touch or full-stack
  - **Content:** Your intervention can be limited to inflation, debt, investment instead of being a fully fledged curriculum
  - **Data Sources:** UC researchers can connect their survey data to credit reports
- **Bonus:** Impact – you are improving financial literacy locally!

Research ideas: Topics that require more work

- Gender differences in financial literacy
- (Cost) effectiveness of financial education in school and the workplace
- Assessing costs of financial illiteracy
- Macro implications of financial illiteracy

Proud of doing work for my country

I chaired the Italian Committee for Financial Education in charge of the national strategy for financial literacy

Supported a law mandating financial education in school

Evaluation of effectiveness:

“**Financial Education at Scale: Experimental Evidence on a National Information Campaign**” with Alessia Sconti, Tim Kaiser et al., 2024.

Impacting policy

Our new work in progress:

- Financial literacy : Why should central banks care

(Keynote to the ECB conference on expectation surveys, October 2024)