The Importance of Financial Literacy: Opening a New Field

Joseph Lucia Memorial Lecture
University of Villanova

Annamaria Lusardi
Senior Fellow, SIEPR
Founder and Academic Director, GFLEC
Director, Financial Freedom Initiative
Main topics I will cover

1. Measuring financial literacy
2. Assessing the impact of financial literacy on behavior
3. Using the data and findings to design policy and programs
4. Implications for teaching and the field
Meet Charlinda
Motivation: Changes in pension system, financial markets, and more

• Changes in the pension system: people are now in charge of their pension
• 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 change
Two numbers to remember from this presentation

3 1/3
Starting with the first number: 3

• How to measure financial literacy: **The Big Three**
  
  *First added in a module in the Health and Retirement Study in 2004*

• Even a small number of questions can provide insights about financial literacy
  
  *They have become a reliable and well-studied measure*

• This small number made it possible to have these questions in many national surveys around the world
  
  *In the US, they were added to national surveys like the Survey of Consumer Finances*
# Measuring financial literacy: The ABCs of personal finance

These are the questions I designed jointly with Olivia Mitchell, known as the “Big Three.”

One question is about inflation:

## The Big 3

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.”

<table>
<thead>
<tr>
<th>More than $102</th>
<th>Exactly $102</th>
<th>Less than $102</th>
<th>Don’t know</th>
<th>Refuse to answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than today</td>
<td>Exactly the same as today</td>
<td>Less than today</td>
<td>Don’t know</td>
<td>Refuse to answer</td>
</tr>
<tr>
<td>True</td>
<td>False</td>
<td>Don’t know</td>
<td>Refuse to answer</td>
<td></td>
</tr>
</tbody>
</table>
The second number: 1/3

- How many people know the ABCs of personal finance, even in countries with well-developed financial markets

- The proportion of “do not know” responses to many financial literacy questions

- How many people were financially fragile before the pandemic started
How much do Americans know? (*Lusardi and Mitchell, JPEF 2011*)

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

<table>
<thead>
<tr>
<th>Responses</th>
<th>Correct</th>
<th>Incorrect</th>
<th>DK</th>
<th>Refuse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rate</td>
<td>64.9%</td>
<td>20.5%</td>
<td>13.5%</td>
<td>1%</td>
</tr>
<tr>
<td>Inflation</td>
<td>64.3%</td>
<td>20.2%</td>
<td>14.2%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Risk diversif.</td>
<td>51.8%</td>
<td>13.3%</td>
<td>33.7%</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

Only about 1/3 correctly answer all 3 questions. About 1/3 do not know about risk diversification.
How much do Canadians know? *(Boisclair, Lusardi and Michaud, JPEF 2017)*

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

<table>
<thead>
<tr>
<th></th>
<th>Correct</th>
<th>Incorrect</th>
<th>DK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rate</td>
<td>77.9%</td>
<td>13.2%</td>
<td>8.8%</td>
</tr>
<tr>
<td>Inflation</td>
<td>66.2%</td>
<td>17.7%</td>
<td>16.1%</td>
</tr>
<tr>
<td>Risk diversif.</td>
<td>59.3%</td>
<td>9.4%</td>
<td>31.3%</td>
</tr>
</tbody>
</table>

Less than half (42.5%) correctly answer all 3 questions. About 1/3 do not know about risk.
How much do Germans know? *(Bucher-Koenen & Lusardi, JPEF 2011)*

Distribution of responses across the German population  
(2009 SAVE)

<table>
<thead>
<tr>
<th></th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Correct</td>
</tr>
<tr>
<td>Interest rate</td>
<td>82.4%</td>
</tr>
<tr>
<td>Inflation</td>
<td>78.4%</td>
</tr>
<tr>
<td>Risk diversif.</td>
<td>61.8%</td>
</tr>
</tbody>
</table>

About half (53.2%) correctly answer all 3 questions. About **1/3** do not know about risk
Evidence from 15 countries and counting:

- 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.
Financial Literacy around the World (Flat World), 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 does the US know? New evidence

Distribution of responses
(2021 National Financial Capability Study)

<table>
<thead>
<tr>
<th>Responses</th>
<th>Correct</th>
<th>Incorrect</th>
<th>DK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rate</td>
<td>69.4%</td>
<td>14.2%</td>
<td>15.4%</td>
</tr>
<tr>
<td>Inflation</td>
<td>53.1%</td>
<td>22.7%</td>
<td>23.1%</td>
</tr>
<tr>
<td>Risk diversif.</td>
<td>41.5%</td>
<td>12.5%</td>
<td>45.2%</td>
</tr>
</tbody>
</table>

Less than 1/3 (28.5.4%) correctly answer all 3 questions. About half do not know or are incorrect about inflation. More than 1/3 do not know about risk.
Who knows the least?
Financial literacy in America (2021 NFCS), by age

Only 1/3 of Americans know these 3 basic concepts by age 55, even though many financial decisions are made well before that age.

Source: 2021 NFCS
Financial literacy by income and education

Financial literacy and income...

Income

<table>
<thead>
<tr>
<th>Income</th>
<th>12%</th>
<th>21%</th>
<th>33%</th>
<th>38%</th>
<th>47%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;$25K</td>
<td>12%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$25-49K</td>
<td>21%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$50-74K</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$75-99K</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$100K+</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

...and education.

Education

<table>
<thead>
<tr>
<th>Education</th>
<th>12%</th>
<th>27%</th>
<th>47%</th>
</tr>
</thead>
<tbody>
<tr>
<td>High school or lower</td>
<td>12%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some college</td>
<td>27%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College degree or more</td>
<td>47%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: 2021 NFCS
Explaining financial literacy (*Lusardi et al., 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.
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)

• Focus on areas of interest and needs
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 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 literacy in America: A failing grade (2023 data)

<table>
<thead>
<tr>
<th>% of P-Fin Index questions answered correctly</th>
<th>Distribution of correct answers to P-Fin Index questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>48%</td>
<td>22-28 correct (76%-100%) 16%</td>
</tr>
<tr>
<td></td>
<td>15-21 correct (51%-75%) 33%</td>
</tr>
<tr>
<td></td>
<td>8-14 correct (26%-50%) 26%</td>
</tr>
<tr>
<td></td>
<td>0-7 correct (&lt;26%) 25%</td>
</tr>
</tbody>
</table>

Source: TIAA Institute-GFLEC Personal Finance Index (2023).
Financial (il)literacy is holding steady: 2017-2023

% of P-Fin Index questions answered correctly

<table>
<thead>
<tr>
<th>Year</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>49%</td>
<td>50%</td>
<td>51%</td>
<td>52%</td>
<td>50%</td>
<td>50%</td>
<td>48%</td>
</tr>
</tbody>
</table>

Distribution of correct answers to P-Fin questions

- 22–28 correct (76%–100%)
- 15–21 correct (51%–75%)
- 8–14 correct (26%–50%)
- 0–7 correct (<26%)

<table>
<thead>
<tr>
<th>Year</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>22–28 correct (%)</td>
<td>16%</td>
<td>16%</td>
<td>18%</td>
<td>20%</td>
<td>18%</td>
<td>18%</td>
<td>16%</td>
</tr>
<tr>
<td>15–21 correct (%)</td>
<td>32%</td>
<td>35%</td>
<td>35%</td>
<td>33%</td>
<td>34%</td>
<td>33%</td>
<td>33%</td>
</tr>
<tr>
<td>8–14 correct (%)</td>
<td>32%</td>
<td>28%</td>
<td>27%</td>
<td>30%</td>
<td>28%</td>
<td>26%</td>
<td>26%</td>
</tr>
<tr>
<td>0–7 correct (%)</td>
<td>20%</td>
<td>21%</td>
<td>20%</td>
<td>17%</td>
<td>20%</td>
<td>23%</td>
<td>25%</td>
</tr>
</tbody>
</table>

What do people know the most and the least

% of P-Fin questions answered correctly

- Borrowing: 58%
- Saving: 55%
- Consuming: 50%
- Go-to info sources: 49%
- Earning: 47%
- Investing: 44%
- Insuring: 42%
- Comprehending risk: 35%

Source: TIAA Institute-GFLEC Personal Finance Index (2023).
“Calculated risk”? New question during COVID

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%

Demographic variation: Women and knowledge

% of P-Fin Index questions answered correctly

Men: 53%
Women: 43%

Distribution of correct answers to P-Fin questions

<table>
<thead>
<tr>
<th>Percent correct</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>22–28 correct (76%–100%)</td>
<td>23%</td>
<td>10%</td>
</tr>
<tr>
<td>15–21 correct (51%–75%)</td>
<td>34%</td>
<td>31%</td>
</tr>
<tr>
<td>8–14 correct (26%–50%)</td>
<td>21%</td>
<td>31%</td>
</tr>
<tr>
<td>0–7 correct (&lt;26%)</td>
<td>21%</td>
<td>28%</td>
</tr>
</tbody>
</table>

Source: TIAA Institute-GFLEC Personal Finance Index (2023).
Financial literacy gender gap in each topic...

% of P-Fin questions answered correctly

<table>
<thead>
<tr>
<th>Topic</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borrowing</td>
<td>63%</td>
<td>53%</td>
</tr>
<tr>
<td>Saving</td>
<td>61%</td>
<td>49%</td>
</tr>
<tr>
<td>Consuming</td>
<td>54%</td>
<td>49%</td>
</tr>
<tr>
<td>Go-to info sources</td>
<td>46%</td>
<td>54%</td>
</tr>
<tr>
<td>Earning</td>
<td>52%</td>
<td>42%</td>
</tr>
<tr>
<td>Investing</td>
<td>52%</td>
<td>37%</td>
</tr>
<tr>
<td>Insuring</td>
<td>46%</td>
<td>37%</td>
</tr>
<tr>
<td>Comprehending risk</td>
<td>38%</td>
<td>31%</td>
</tr>
</tbody>
</table>

Source: TIAA Institute-GFLEC Personal Finance Index (2023).
...and in answering “Do not know”

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borrowing</td>
<td>27%</td>
<td>37%</td>
</tr>
<tr>
<td>Saving</td>
<td>28%</td>
<td>33%</td>
</tr>
<tr>
<td>Consuming</td>
<td>28%</td>
<td>41%</td>
</tr>
<tr>
<td>Go-to info sources</td>
<td>29%</td>
<td>38%</td>
</tr>
<tr>
<td>Earning</td>
<td>27%</td>
<td>34%</td>
</tr>
<tr>
<td>Investing</td>
<td>17%</td>
<td>20%</td>
</tr>
<tr>
<td>Insuring</td>
<td>21%</td>
<td>29%</td>
</tr>
<tr>
<td>Comprehending risk</td>
<td>19%</td>
<td>27%</td>
</tr>
</tbody>
</table>

% of P-Fin questions answered with "don't know"

Source: TIAA Institute-GFLEC Personal Finance Index (2023).
Our new project addressing the gender difference

*Fearless Woman*: Financial Literacy and Stock Market Participation

Tabea Bucher-Koenen (ZEW, U of Mannheim)
Rob Alessie (U of Groningen)
Annamaria Lusardi (The George Washington University and GFLEC)
Maarten van Rooij (DNB)
Where changes happened over time: Toward an unequal path

% point change in P-Fin questions answered correctly, 2017 to 2023

- Less than $25k: -6
- $25k to $49k: -7
- $50k to $99k: -4
- $100k or more: -1
- Females: -5
- Males: 2
- Financial education: 2
- No financial education: -3

Confirming findings on the young

In the US, young people who are financially literate are disproportionally white males from college-educated families.
Assessing the impact of financial literacy
Does financial literacy matter?
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 the pandemic: 1/3 cannot face a shock

Financial fragility over time

Financial literacy and being able to cope

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

Source: TIAA Institute-GFLEC Personal Finance Index (2022).

% of P-Fin questions answered correctly

- < 26%: 32%
- 26%-50%: 43%
- 51%-75%: 65%
- 76%-100%: 79%

Those with greater financial literacy are less likely to be financially fragile.
The relationship between being able to cope and financial literacy (*Lusardi et al., JAPP 2023*)

<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>&gt; 50% of P-Fin questions correct</td>
<td>0.079*** (0.018)</td>
<td>0.007*** (0.001)</td>
</tr>
<tr>
<td>Total # of questions correct</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was offered financial education</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Demographic controls</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Observations</td>
<td>3,377</td>
<td>3,377</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.187</td>
<td>0.190</td>
</tr>
</tbody>
</table>

Source: TIAA Institute-GFLEC Personal Finance Index (2022).
The relationship between retirement planning and financial literacy

<table>
<thead>
<tr>
<th></th>
<th>Model 1 Retirement Planning</th>
<th>Model 2 Retirement Planning</th>
<th>Model 3 Retirement planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 50% of P-Fin questions correct</td>
<td>0.125*** (0.023)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total # of questions correct</td>
<td></td>
<td>0.011*** (0.002)</td>
<td></td>
</tr>
<tr>
<td>Was offered financial education</td>
<td></td>
<td></td>
<td>0.074*** (0.021)</td>
</tr>
<tr>
<td>Demographic controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Observations</td>
<td>2,507</td>
<td>2,507</td>
<td>2,507</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.183</td>
<td>0.192</td>
<td>0.176</td>
</tr>
</tbody>
</table>

Source: TIAA Institute-GFLEC Personal Finance Index (2022); non-retirees.
Financial literacy matters

Who is financially literate:

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

The findings in the P-Fin Index confirm the results in other studies using the Big Three around the world.
Use research to inform policy & programs
What we learned from data and research

• Very **low** levels of financial literacy, even in advanced economies
  
  *Cannot take financial literacy for granted*
  
  *The world is changing fast, we need to catch up*

• Large **heterogeneity** across demographic subpopulations
  
  *One size does not fit all*

• Financial literacy has an **impact** on behavior
  
  *It can impact the macroeconomy too*
Financial education for Millennials

Program:
● Covered 5 basic concepts for financial planning
● Targeted to young workers
● It is a story (narrative or video)

We put together a team of researchers from different fields:
Economics, psychology, and linguistics

We evaluated its effectiveness

Five steps to financial success: Topics

The five topics

- **Compound interest**
  - How to grow your wealth
- **Inflation**
  - The erosion of purchasing power over time
- **Risk diversification**
  - Do not put all your eggs in one basket
- **Tax treatment of retirement savings vehicles**
  - Taxes advantages; 401(K) and IRAs
- **Employer matches in defined contribution saving plans**
  - Don’t leave money on the table
Five steps to financial success: Effectiveness

- After being exposed to videos, financial literacy improved among participants.
- While young were targeted, the videos affected all age groups.
- 25-33% of the knowledge gain is still observable after 8 months.
- People learned even difficult topics, such as risk diversification.

Even short interventions can affect knowledge.
Policy: National strategies for financial literacy

More than 80 countries have done or are doing a national strategy for financial literacy.
A national strategy for financial literacy in Italy

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

We did many initiatives all based on research and data.

We provided guidelines for financial education for young and adults.

We evaluated the effects of a national information campaign.
Implications for teaching and the field
Need for large and scalable programs

Financial education in

• school

• the workplace

• the community (libraries, museums, other places where people go to learn)
My personal finance courses

• Started a Personal Finance course at GW in 2012
• For both undergraduate and graduate students
• Based on data and research
• Taught risk at the end and devoted many classes to it
New course at Stanford

- Teaching personal finance to Stanford students
- Can serve as a springboard to scale compelling curriculum online to a wide variety of constituents and ensure as much access as possible for effective distribution
Our teaching personal finance conference
It’s time to teach personal finance in every college/university

• The first conference on teaching personal finance
• We want to extend the course to create programs for alumni and have students become ambassadors for financial literacy
• We want to promote personal finance in other universities and colleges, from the Ivy League to community colleges.
Financial Freedom Initiative

Collaboration between:

Through the initiative, we will offer robust in-person and online learning opportunities to a variety of audiences, build a strong research pipeline in the field of financial literacy, and initiate and facilitate external partnerships, which together have the potential to improve the quality of financial decision-making, lead to effective interventions, and inform policy.
Financial literacy has its JEL code (G53)
The first journal for the financial literacy field

- Two issues already released in 2023
- Submissions are highly encouraged
Some new initiatives

- Adding financial literacy to national statistics, such as reporting GDP or inflation, and use it for policy.

  *A financial literacy target?*

- Finland launched a challenge: they want to be the most financially literate country by 2030.

- In the US, many states are making financial education mandatory in high school. Good new data for research.
Living well

We need to 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.
How I have changed my Personal Finance course

• I spend the first class describing the many decisions we will cover

• We start in plain English; class by class, we learn the language of finance

• I take into consideration the differences among students

• I always report the data from our research

• What is this course about? It is a happiness project; it is about achieving financial freedom!
Thank you.

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If you have any questions, please send them to alusardi@stanford.edu.