THE ECONOMIC IMPORTANCE OF FINANCIAL LITERACY

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Chair, OECD-INFE Research Committee
The growing importance of financial literacy

A new economic landscape

Major changes that increase individuals’ responsibility for their financial well-being

- Changes in the pension landscape
  - More individual accounts and DC pensions

- Changes in labor markets
  - Divergence in wages – skills are critical

- Changes in financial markets
  - Greater complexity
  - More opportunities to borrow & in large amounts
Increase in individual responsibility

Being our own CFO

- **Individuals make many financial decisions**
  - Investment in education
  - Financial security after retirement
  - Investing in financial markets & other markets (buying a home, car, etc)

- **Not enough to look at asset side; liability side is equally important**
  - Increase in household debt
  - Debt normally incurs higher interest rates than what is earned on assets

- **Financial decisions are complex**
  - Many more financial products than in the past
A large amount of research in past 15 years

Some questions

1. How well-equipped are people to make financial decisions?
2. Are there vulnerable groups?
3. Does financial literacy matter?
4. What can be done to promote financial literacy and financial decision-making?
How well-equipped are people?

Do individuals know the basic concepts that are key to making financial decisions?

Aim: Assess knowledge of basic concepts: The abc’s of personal finance

The journey of three simple questions
Measuring financial literacy (I)

To test numeracy and understanding of interest rates, we asked:

“Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?”

- More than $102
- Exactly $102
- Less than $102
- Don’t know (DK)
- Refuse to answer
Measuring financial literacy (II)

To test understanding of inflation, we asked:

“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
- Less than today
- Don’t know (DK)
- Refuse to answer
Measuring financial literacy (III)

Finally, to test understanding of risk diversification, we asked:

“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
- False
- Don’t know (DK)
- Refuse to answer
Financial Literacy around the World (FLat World)

Evidence from 13 countries:

- USA
- The Netherlands
- Germany
- Italy
- Russia
- Sweden
- New Zealand
- Japan
- Australia
- France
- Switzerland
- Romania
- Canada
Collecting new data

The 2009 & 2012 National Financial Capability Study (new 2015 wave is in the field)
How much do Americans know?

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

<table>
<thead>
<tr>
<th></th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Correct</td>
</tr>
<tr>
<td>Interest rate</td>
<td>65%</td>
</tr>
<tr>
<td>Inflation</td>
<td>64%</td>
</tr>
<tr>
<td>Risk diversif.</td>
<td>52%</td>
</tr>
</tbody>
</table>

NB: Only 30% correctly answered all three Qs; less than half (46%) got the first two Qs right. Strikingly similar evidence across countries.
How much do Germans know?

Distribution of responses across the German population (2009 SAVE)

<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>82%</td>
<td>7%</td>
<td>11%</td>
<td>0%</td>
</tr>
<tr>
<td>Inflation</td>
<td>78%</td>
<td>5%</td>
<td>17%</td>
<td>0%</td>
</tr>
<tr>
<td>Risk diversif.</td>
<td>62%</td>
<td>6%</td>
<td>32%</td>
<td>0%</td>
</tr>
</tbody>
</table>

NB: About half (53%) correctly answer all 3 questions; 72% got the first two questions right.
How much do Dutch know?

Distribution of responses across the Dutch population (2010 DNB Household Survey)

<table>
<thead>
<tr>
<th></th>
<th>Correct</th>
<th>Incorrect</th>
<th>DK</th>
<th>Refuse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rate</td>
<td>85%</td>
<td>5%</td>
<td>9%</td>
<td>1%</td>
</tr>
<tr>
<td>Inflation</td>
<td>77%</td>
<td>8%</td>
<td>14%</td>
<td>1%</td>
</tr>
<tr>
<td>Risk diversif.</td>
<td>52%</td>
<td>13%</td>
<td>33%</td>
<td>2%</td>
</tr>
</tbody>
</table>

NB: Less than half (45%) correctly answer all 3 questions; 73% got the first two questions right.
How much do Japanese know?

Distribution of responses in the Japanese population (2010 SLPS)

<table>
<thead>
<tr>
<th>Responses</th>
<th>Correct</th>
<th>Incorrect</th>
<th>DK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rate</td>
<td>71%</td>
<td>15%</td>
<td>13%</td>
</tr>
<tr>
<td>Inflation</td>
<td>59%</td>
<td>11%</td>
<td>28%</td>
</tr>
<tr>
<td>Risk diversif.</td>
<td>40%</td>
<td>3%</td>
<td>56%</td>
</tr>
</tbody>
</table>

NB: 27% correctly answered all three questions; less than half (49%) got the first two questions right.
### How much do Canadians know?

#### Distribution of responses in the Canadian population (2012 CSA Investor Index Survey)

<table>
<thead>
<tr>
<th></th>
<th>Correct</th>
<th>Incorrect</th>
<th>DK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rate</td>
<td>78%</td>
<td>13%</td>
<td>9%</td>
</tr>
<tr>
<td>Inflation</td>
<td>66%</td>
<td>18%</td>
<td>16%</td>
</tr>
<tr>
<td>Risk diversif.</td>
<td>59%</td>
<td>10%</td>
<td>31%</td>
</tr>
</tbody>
</table>

NB: Less than half (42%) correctly answered all three questions; 58% got the first two questions right.
A large amount of research in past 15 years

Some questions

1. How well-equipped are people to make financial decisions?
2. Are there vulnerable groups?
Financial literacy across age groups (2012 NFCS)

The widespread lack of financial literacy

<table>
<thead>
<tr>
<th></th>
<th>Total sample</th>
<th>Millennials</th>
<th>Mid-career</th>
<th>Pre-retirees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest Q correct</td>
<td>80%</td>
<td>75%</td>
<td>81%</td>
<td>83%</td>
</tr>
<tr>
<td>Inflation Q correct</td>
<td>65%</td>
<td>50%</td>
<td>68%</td>
<td>79%</td>
</tr>
<tr>
<td>Risk Q correct</td>
<td>54%</td>
<td>44%</td>
<td>56%</td>
<td>62%</td>
</tr>
<tr>
<td>All 3 Qs correct</td>
<td>41%</td>
<td>28%</td>
<td>43%</td>
<td>51%</td>
</tr>
</tbody>
</table>

Note: Respondents aged 23 to 61 and employed at the time of the survey. Young people know the least in most countries.
Financial Literacy and Age: Canada

Correct answers by age

- **Interest**
- **Inflation**
- **Risk**
- **All correct**

Bars represent the percentage of correct answers for each category, grouped by age groups:
- Younger than 35
- 35-54
- 55-64
- 65 and older
Are students well prepared for future challenges? Can they analyze, reason and communicate effectively? Do they have the capacity to continue learning throughout life?

Every three years the OECD Programme for International Student Assessment (PISA) answers these questions and more. It assesses to what extent students near the end of compulsory education have acquired some of the knowledge and skills essential for full participation in society.
Average performance of 15-year-olds in financial literacy

375

385

395

405 415

425

435 445

455

465 475

485

495 505

515

525 535 545

555

565 575

585

595 605

Shanghai-China

Flemish Community
(Belgium)

Australia

Czech Republic

New Zealand

Poland

Latvia

United States

Spain

Estonia

Slovenia

Israel

Colombia

Slovak Republic

Italy

Strong performance in financial literacy

Low performance in financial literacy

Mean score

Strong performance in financial literacy
Financial knowledge among women

- Very robust findings of large gender differences in financial knowledge
- Women are much more likely to say “I do not know”

**Financial knowledge by gender** (% answering 3 Qs correctly)

**At least one "don't know" answer, by gender**
"Do not know" responses by gender (age 23-28, NLSY)
Gender differences in self-reported literacy (TNS data for US - 2009)

On a scale of 1 (very low) to 7 (very high), how would you assess your overall financial knowledge?

![Bar chart showing gender differences in financial knowledge assessment.](chart.png)
Three main findings

Strikingly similar patterns across countries

- Financial illiteracy is widespread in the population
  - Particularly low among the young

- Risk diversification is most difficult concept
  - Prevalence of “do not know” answers

- Gender difference in financial literacy
  - Women more likely than men to answer “I do not know” to financial literacy questions
Implications: What the research suggests

- Need to improve levels of financial literacy
  - Levels of knowledge are low

- Need for more targeted programs
  - One size does not fit all

- Women are an ideal group for financial education programs
  - They know what they do not know

- Many people will be unlikely to participate in financial education programs
  - Unaware that they need it
A large amount of research in past 15 years

Some questions

1. How well-equipped are people to make financial decisions?
2. Are there vulnerable groups?
3. Does financial literacy matter?
It pays to be financially literate

Debt and debt management

Investments

Planning and wealth accumulation
An earlier thinker on financial literacy

“An investment in knowledge pays the best interest.”

Benjamin Franklin, *The Way to Wealth*, 1758
Most recent research work

Financial knowledge & 401(k) investment performance

- Use administrative data from large financial institution
  - High quality data

- Designed survey that had the 3 financial literacy questions + questions on pension literacy
  - Higher financial literacy than in the US population

- Linked financial literacy to return on 401(k) investments
  - Unique data

- Those who are more financially literate earn 130 basis points more on their portfolio (adjusted for risk)
  - Similar evidence is emerging in other papers
Special issue of JPEF, project ongoing

- FLat World project
- Examine the link between financial literacy and retirement planning
- We published a paper for each participating country
Planning ahead: Most workers don’t

Have you ever tried to figure out how much you need to save for retirement?
- Yes, 46%
- No, 50%
- DK, 3%
- Refused, 1%

Have you set aside an emergency or rainy day fund?
- Yes, 41%
- No, 56%
- DK, 2%
- Refused, 1%

Are you setting aside any money for your children's college education?
- Yes, 40%
- No, 57%
- DK, 1%
- Refused, 2%

Note: Respondents age 23 to 61 and employed at the time of the survey. 2012 NFCS
Retirement planning and wealth holdings

Median Net Worth, 2004 US HRS, age 51-56

Non-planners: $122,000
Planners: $308,000
Financial literacy affects retirement planning

- Those who are financially literate are 9 percentage points more likely to plan
- Causality goes from financial literacy to planning

Knowledge of risk diversification is most important for retirement planning

Findings hold true across different measures of planning and across countries
A quick look at debt close to retirement

- **Data**

- **Empirical analysis**
  - Evaluate if/why patterns changed over time.
  - Evaluate factors associated with debt/debt management for those on verge of retirement
The increase in debt across cohorts

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<tbody>
<tr>
<td>Total debt/Total assets &gt; 0.5</td>
<td>9.6%</td>
<td>16.0%</td>
<td>22.9%</td>
</tr>
<tr>
<td>Home loans/home value &gt; 0.5</td>
<td>17.0%</td>
<td>26.4%</td>
<td>29.3%</td>
</tr>
<tr>
<td>Respondents with &lt; $25,000 in savings (in $2012)</td>
<td>18.0%</td>
<td>16.4%</td>
<td>24.3%</td>
</tr>
</tbody>
</table>
What the research suggests

- **Baby Boomers carry debt close to retirement**
  - Recent old cohorts have borrowed more
  - They will have to manage debt into retirement

- **Debt and financial literacy are closely linked**
  - Using NFCS data, we confirm results from HRS about borrowing and can link borrowing to financial literacy
  - Financial literacy has an effect above and beyond income, education, and other demographics

- **The link between debt and financial literacy holds true for other forms of debt and age groups**
  - High cost borrowing and borrowing on retirement accounts
Long-term debt among Millennials (age 23-35, 2012 NFCS)

![Graph showing long-term debt among Millennials across different types of loans.]

- Student loan: 42%
- Home mortgage: 35%
- Car loan: 41%

*Note: The statistics relative to home mortgage and car loan are unconditional means.*
A large amount of research in past 15 years

Some questions

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2. Are there vulnerable groups?
3. Does financial literacy matter?
4. What can be done to promote financial literacy and financial decision-making?
Scalability: Reaching the population

Venues for financial education

- In schools
  - Easier to reach the young

- In the workplace
  - Easier to reach the adults

- In libraries, local communities, museums
  - Where people go to learn
Financial education in schools

Need to prepare the new generations

Financial education in school is critically important:

- Investment in higher education is one of the most important decisions the young face
  - Young people start their economic life in debt

- Need to be financially literate *before* engaging in financial transactions

- Provide a basis on which to build
  - It will be cheaper to do workplace financial education
New Field: Personal Finance

A new course at the George Washington University

Financial Decision-Making: Implications for the Consumer and the Professional

- Cover personal finance with a rigorous approach
  - A quantitative approach to personal finance
  - Teaching takes into consideration gender differences in fin literacy

- It incorporates some macro, accounting, and risk management

- Writing a new textbook on personal finance
  - Joint with a mathematician
Our (STAR) students

Undergraduates, graduate students and... athletes

Our students in and out of the classroom
A program for the young

Five steps to planning success

- We designed a program for young workers
  - They are the ones with low literacy

- Used new method of communication
  - A video

- Kept the message free of economic/finance jargon
  - Very important for women

- Covered concepts, such as risk diversification, in a simple story
Short video about risk

Risk diversification = don’t put all your eggs in one basket

Link to Video http://www.rand.org/labor/centers/financial-literacy.html
We measured whether it worked

- Tested interventions using an Internet panel
- Baseline questions on 5 concepts
- Randomly assigned
  - Intervention group
    - Video only, narrative only, video & narrative
  - Control group
    - No intervention
- Repeated 5 concepts questions
Findings

- After being exposed to videos, the performance on financial literacy questions (general knowledge and hypothetical choices) improved.
- While young were targeted, the videos affected all age groups.
Visual tool to understand risk

Don't put all your savings in one basket: FinVis
FinVis tutorial – Visualizing risk

What can we expect from different investments?

I decided to put my $5000 in the investment with some risk, the "Riskier Fund".

I decided to put my $5000 in the investment with less risk, the "Less Risky Fund".

Invest in R

Invest in L
Managing risk – Visual aid

**FinVis**

**Introduction**

**Kate and Sam’s choices**

**Your Choices**

**Spreading your investments widely.**

I also want to spread my risk, so I’ll invest in three different companies - ComputerStars, iComputer, and Laptop Times.

But all of these are companies that depend on the year’s sale of computers. See what happens if Sam splits his money between these three companies.

- Invest in ComputerStars
- Invest in iComputers
- Invest in Laptop Times

**Spreading your investments across similar companies doesn't lower your risk much.**

- See an outcome in a bad year
- See an outcome in a good year
How to help employees make financial decisions

The Dartmouth Project

- Simplify financial decisions
- Provide information when needed by individuals
- Target specific groups
- Use communication that does not rely on figures and numeracy
A planning aid

Together with a marketing professor, I designed a planning aid intended to help Dartmouth College employees enroll in supplementary retirement accounts (SRA).

We have outlined 7 simple steps to help you complete the application.

1. Select a 30 minute time slot right now to complete the online contribution to your Supplemental Retirement Account (SRA) during the next week.

2. 3 minutes. Check to see if you have the following materials: a) worksheet in your benefits packet _, and b) the name and social security number of a beneficiary __.

3. Select the amount you want to invest for 2006 (minimum: $16/month, maximum: $1,666.67/month), even if you don’t know your take-home pay in your first month. If you want, you can change this amount at a later date. This voluntary contribution is tax-deferred, you will not pay taxes on it until you withdraw the funds.

4. 5 minutes. Select a carrier. If you do not select a carrier, Dartmouth will invest the non-voluntary portion of your college funds in a Fidelity Freedom Fund, a fund that automatically changes asset allocation as people age.

5. 5 minutes. Now you are ready to complete your worksheet. Complete the worksheet even though you may be unsure of some options. You can change the options in the future.

6. Take your completed worksheet to a computer that is available for 20 minutes. If you like, you can use the one in the Human Resources office at 7 Lebanon Street, Suite 203.

7. 15-20 minutes. Log on to Flex Online and complete your online SRA registration within the 20 assigned minutes. Be sure to click on the investment company (TIAA-CREF, Fidelity, or Calvert) to complete the application. You need to set up your account – otherwise your savings will not reach the carrier.
Most people plan on electing a supplemental retirement account, but feel they don’t have the time or information right now. We have outlined 7 simple steps to help you complete the election process. It will take between 15 – 30 minutes, from start to finish. It will take less time for you to start to insure your future than it takes you to unload your dishwasher!

Don’t give up! Contact the Benefits Office (6-3588) if for any reason you could not complete the online application.
Program effectiveness

There was a large increase in savings enrollment within 30 and 60 days of hiring among participants who received the brochure.

<table>
<thead>
<tr>
<th></th>
<th>30 days After Hire</th>
<th>60 days After Hire</th>
<th>Number of Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>7.3%</td>
<td>28.9%</td>
<td>210</td>
</tr>
<tr>
<td>Planning aid</td>
<td>21.7%</td>
<td>44.7%</td>
<td>166</td>
</tr>
</tbody>
</table>
A program for any company

- Ten steps divided into 3 stages: Basic, Intermediate, and Advanced

- Customize the program for employees
  One size does not fit all

- The Employee Checklist
  Ten guidelines with implementation tips to improve employees’ financial fitness
The success of employee benefit programs depends on employee participation rates! Nearly four in five employees claim they would benefit from financial advice and answers to everyday questions. Improve employee participation rates, employee welfare and your company's bottom line by using our customizable employer and employee financial fitness toolkits.

**THE BASICS**

**Automatic Enrollment**
Participation soars when employees are automatically enrolled.
MORE

**Automatic Escalation**
Scheduled increases make the most of automatic enrollment.
MORE

**Lifecycle Asset Allocation**
Give employees the chance to grow their retirement savings.
MORE
**INTERMEDIATE**

**Employee Toolkit**
Increase participation rates by empowering employees to customize programs. [MORE](#)

**Direct Deposit**
Increase safety and lower administrative costs at the same time. [MORE](#)

**Financial Planning and Tax Preparation**
Employee satisfaction is an advantage. Create a culture of caring for employees. [MORE](#)

**Credit Scores**
Improved employee credit scores have direct and indirect benefits to employers. [MORE](#)

**ADVANCED**

**Debt Management**
Help with debt management can prevent an employee's loss of focus and performance. [MORE](#)

**Health and Financial Fitness Assessment**
Data enables employers to design an evidence-based benefit plan. [MORE](#)

**Financial Planning Seminars**
Educate your employees about the customized financial plans available to them. [MORE](#)
Building long-term financial security

Best practices

How employers can help new hires save for retirement:

Best practices that build long-term financial security

We prepared a report documenting best practices for improving financial decision making in the workplace.

- Based on studies of many employer-provided financial education programs
- Goal of the report is to help employers improve retirement saving choices of newly hired workers
A saving museum in Turin, Italy
An International Federation of Finance Museums: four founders – now extended to many museums
Concluding remarks

Shifting paradigm

➢ Equipping people to make saving and retirement decisions
  • Financial literacy is an essential skill for the 21st century

➢ Need to start early
  • The importance of financial literacy in school. These are not separate topics. Pension providers and employers should speak to the Department of Education

➢ Need targeted approach
  • Workers are very different

➢ Cannot focus on retirement savings only
  • Other decisions are important and affect retirement security
"Well-informed consumers, who can serve as their own advocates, are one of the best lines of defense against the proliferation of financial products and services that are unsuitable, unnecessarily costly, or abusive."

Ben Bernanke, Former Chairman of the Fed
Financial illiteracy is a complex but solvable problem

“It always seems impossible until it is done.”

Nelson Mandela
Contact and further information

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FinLit Talks: [http://www.gflec.org/](http://www.gflec.org/)