

# The Role of Financial Literacy, Education, and Advice in Financial and Retirement Planning Decisions

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Little need for fin. literacy in a world on auto-pilot

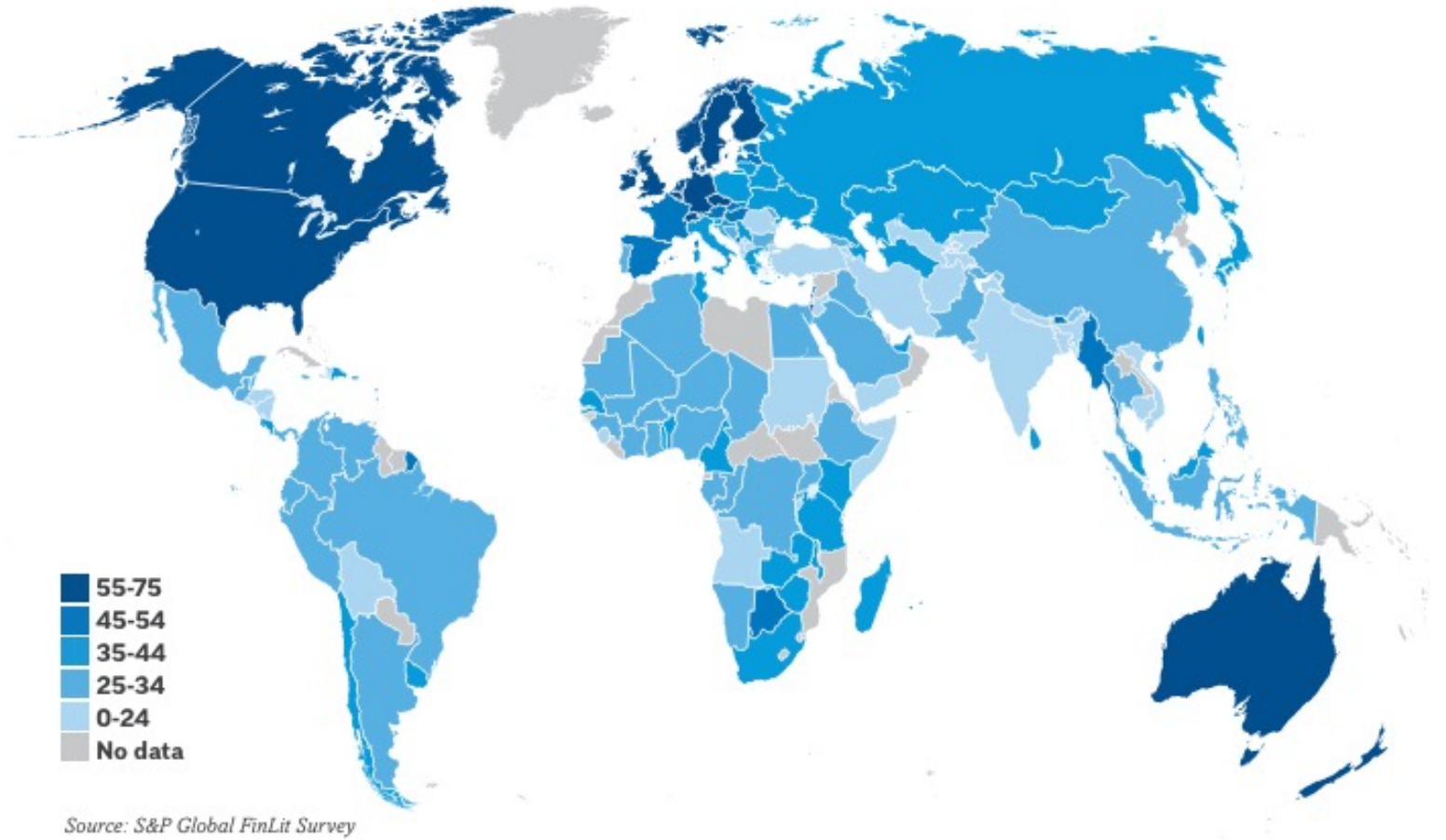


Fast  
forward to  
today

You are now (mostly) in  
control

Basic financial knowledge is lacking for many

**MAP 1: GLOBAL VARIATIONS IN FINANCIAL LITERACY**  
(% OF ADULTS WHO ARE FINANCIALLY LITERATE)



Source: Klapper, Lusardi and Oudheusden (2016)

# Is that a problem?



Likely makes decision-making more difficult



Linked (with some attempts at causality) to retirement planning



Linked to a number of other less desirable outcomes (higher fees, lower returns, less diversification, higher borrowing costs)

# The difficulty of the normative benchmark

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Defining poor decisions is hard

Already at financial level, irrespective of preferences, requires huge amounts of data about present and future, lots of uncertainty

With heterogeneous preferences, occasions for unambiguous classification of *mistakes* are rare (mostly budget constraint arbitrage opportunities)

# Policy Toolbox

We lack an integrated framework for choosing...



EDUCATION AND  
INFORMATION



CHOICE  
ARCHITECTURE



ADVICE



DECISION AIDS

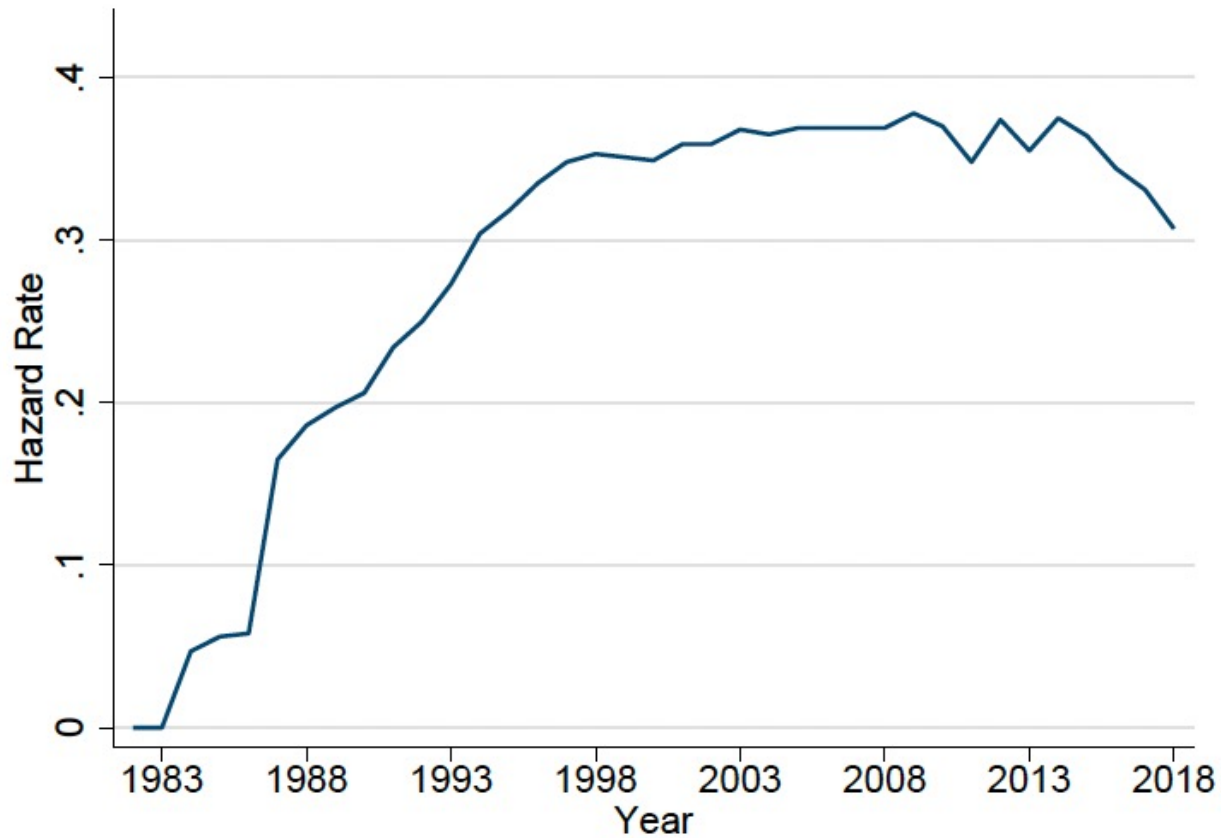
# Which tool under which circumstances?

- Knowledge gaps
  - Is acquiring knowledge costly?
- Heterogeneous optimal decisions
  - Can we predict what is optimal for each individual given data?
- Behavioral biases
  - Even if the individual *knows* the optimal decision, are there biases that may lead to sub-optimal outcomes (present-bias, procrastination)?



Some examples from Canada

### Fraction claiming CPP-QPP at age 60



Source: Longitudinal Administrative DataBank.

Canada: Many claim public pension as early as possible (Age 60)

To foster higher annuitization, policymakers in Canada want to provoke more delays

# Delays Optimal for All?

Several factors can make claiming at age 60 optimal (from financial perspective)

- Lower life expectancy

- Taxes

- Means-testing of benefits

Normative benchmark even more complicated:

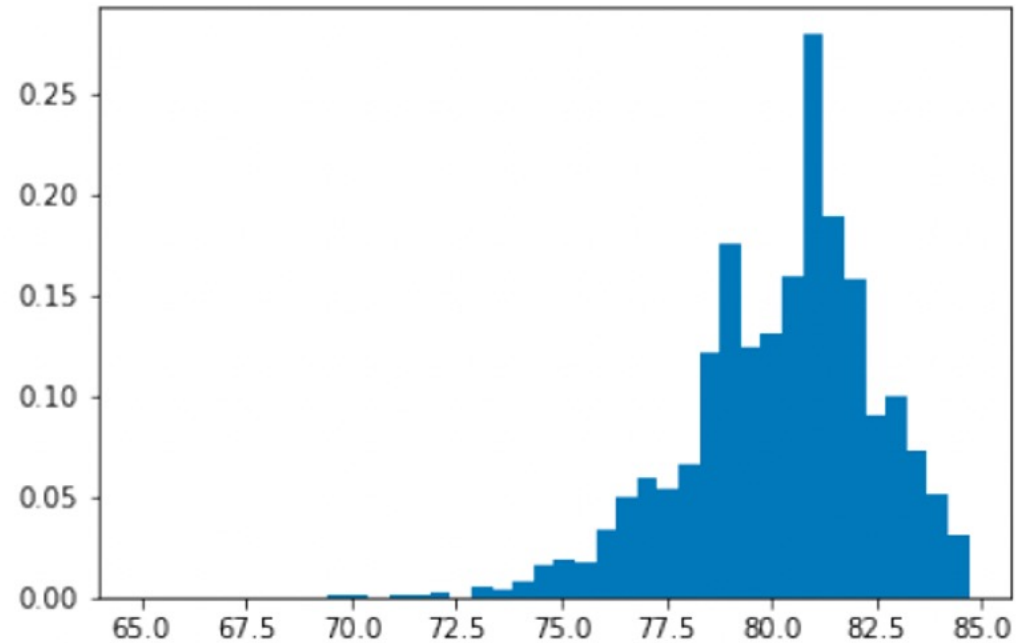
- Bequests

- Leisure

- Liquidity constraints

- Other preference factors

Distribution of Life expectancy at 60



Source: Glenzer et al. (2023)

# Claiming Delays Not Financially Profitable for Everyone

- Proposal to increase minimum age to 62
- In one simulation study, we find that  $\frac{3}{4}$  gain by delaying to 62
- But one quarter loose, lower income, singles, lower life expectancy
- How to increase delays for the *right* group?

Delay to 62	Outcome
Average Gain	1 236\$
Fraction Win	72.5%
Gain for Winners	2 816\$
Fraction Loose	27.5%
Loss for Losers	-2 984\$

Source: Michaud et al. (2020)

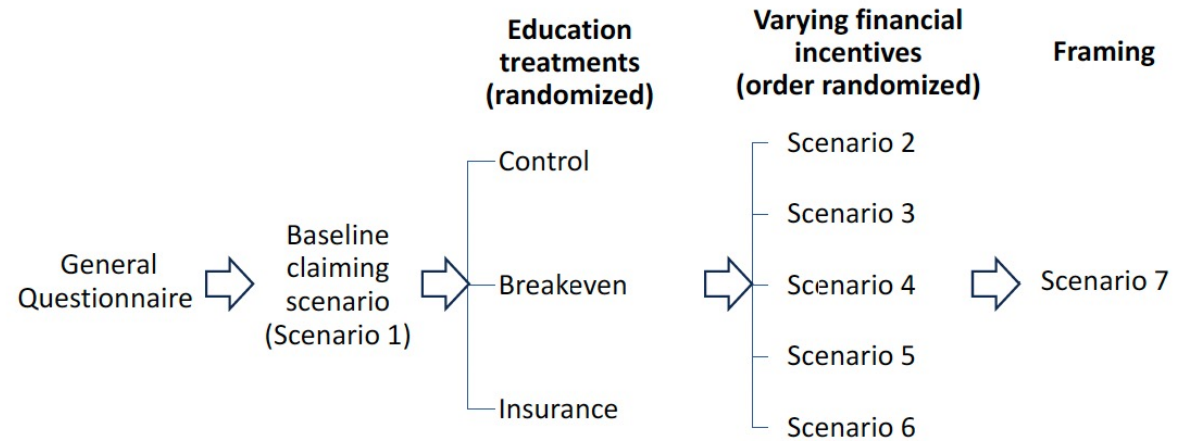
# Experimental Study

3000 Canadians  
55-59

Stated-  
preference  
vignettes with  
elicitation of  
claiming age

Design to Vary  
Incentives,  
Education  
Treatment and  
Framing  
Treatments

## Experimental Design



Glenzer, Michaud and Staubli (2023, NBER 30398)  
*Frames, Incentives, and Education: Effectiveness of Interventions to Delay Public Pension Claiming*

# Effectiveness vs. Desirability

- Framing has largest effects on behavior
  - But no clear gain (many losers and winners)
- Education has little effect in aggregate on delays
  - But positive financial gains
- What is the policy objective?

	Education	Framing
Effect on Delays	+ for pessimists - for optimists	++
Effect on Financial Gain	+	None

# Advice and Familiarity

- D'Astous, Gemmo and Michaud (2023, NBER 30205) *The Quality of Financial Advice: What Influences Client Recommendations?*
- Experiment with 1044 financial planners from Canada.
- Vignettes in four domains: retirement saving, investment, long-term care and decumulation



# Example: Investment Vignette

Your client, Kate is a 45-year-old female high school teacher with an annual gross income of \$50,000. She is married and has two kids under the age of 10. Her husband is currently looking for a job in marketing. Kate currently holds \$75,000 in her TFSA and this year, there is no room to contribute to her RRSP (because she holds a DB pension). The mortgage on her house is fully paid off and the line of credit on the house is unused. Kate has \$40,000 in a savings account that she is looking to invest (within her TSFA) for a time-horizon of three years. She inquires about the option of investing in an exchange-traded fund (ETF).

*From the four options below, which one would you recommend first to Kate?*

## **Recommendations to choose from**

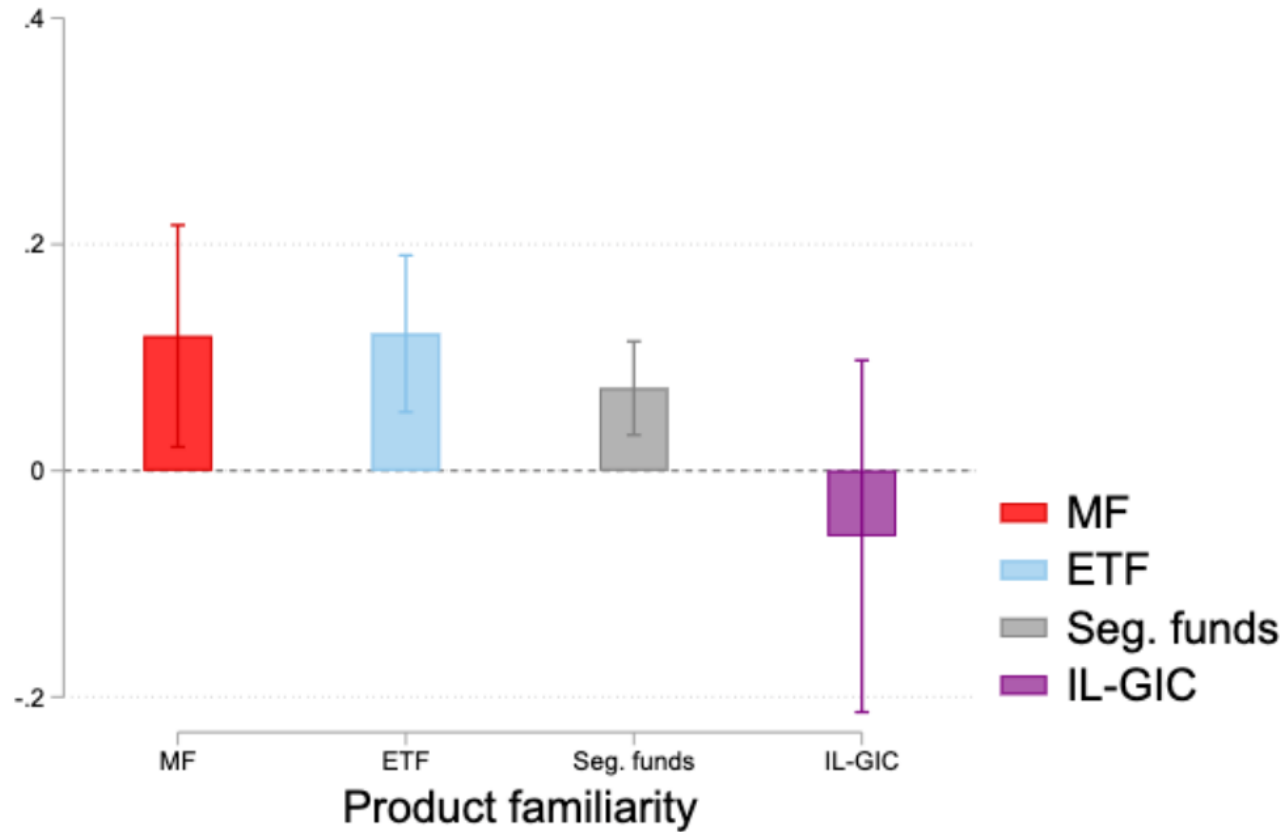
1. Index-linked 3-year GIC
2. Mutual Fund
3. Segregated Fund
4. ETF in self-directed account

## **Randomized parameters**

- ▶ Name-gender of the client
- ▶ Segregated funds fees (2%, 3%, or 4%)
- ▶ Mutual fund fees (1%, 2%, or 3%)
- ▶ Client inquires about ETFs



# When Segregated Fund fees lower than Mutual Fund fees...



# Complementarity between Advice and Financial Literacy

- Some interesting questions to understand better the market for advice:
  - On the demand side, does the willingness-to-pay for advice increase or decrease with financial literacy?
  - On the supply side: does the marginal cost of providing advice decrease with the financial literacy of the client? How about the marginal benefit to the advisor?
- Understanding the value of advice requires a proper framework involving these complementarities

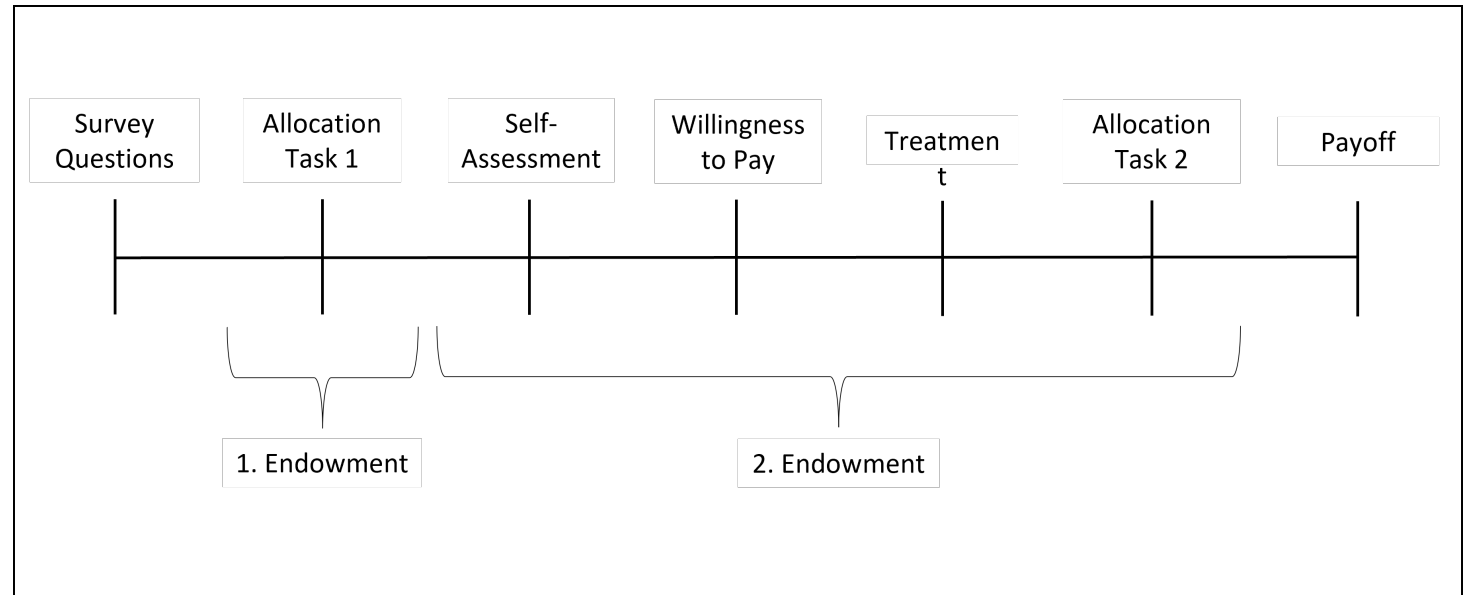


# How do Investors Value Financial Education?

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- Gemmo, Michaud and Mitchell (2023, NBER 31682) *Selection into Financial Education and Effects on Portfolio Choice*

- Incentivized experiment with 2000 respondents



# Willingness to Pay Elicitation

- Random assignment to eligible and non-eligible
- If eligible (BDM elicitation):
  - State a willingness to pay between 0 and 5\$,  $w$ .
  - Probability get treatment is  $w/5$
  - Random draw to assign to treatment.
- In the end, three groups: non-eligibles, eligibles not treated and eligibles treated.
- Differences between eligibles treated and untreated potentially non-random. Can study selection



Table 4: Regression Estimates of Factors Associated with Willingness to Pay for Financial Education

	(1)		(2)		(3)	
	Reject		Willingness to		Willingness	
	program		pay ( $\geq 0$ )		to pay	
Apply information: yes	-0.067	(0.025)	0.399	(0.111)	0.508	(0.110)
Apply information: dk	0.045	(0.026)	0.091	(0.149)	-0.083	(0.133)
Exp. higher return: yes	-0.129	(0.026)	0.338	(0.119)	0.588	(0.117)
Exp. higher return: dk	0.017	(0.025)	0.057	(0.142)	-0.072	(0.129)
Female	-0.029	(0.020)	0.073	(0.094)	0.139	(0.091)
College or some university	0.042	(0.030)	-0.111	(0.142)	-0.188	(0.135)
Bachelor degree or more	0.058	(0.030)	-0.221	(0.141)	-0.307	(0.135)
ln(Household income)	0.020	(0.006)	-0.017	(0.021)	-0.060	(0.022)
Household income missing	0.128	(0.022)	-0.154	(0.140)	-0.573	(0.117)
Financial wealth	-0.005	(0.003)	0.012	(0.010)	0.019	(0.010)
Financial Literacy Score	-0.045	(0.013)	-0.029	(0.073)	0.150	(0.063)
Cognitive Ability Score	0.017	(0.011)	0.046	(0.051)	0.012	(0.050)
Numeracy Score	-0.055	(0.015)	-0.066	(0.058)	0.061	(0.059)
Financial knowledge: high	0.010	(0.037)	-0.498	(0.154)	-0.446	(0.153)
Financial knowledge: very high	0.039	(0.051)	-0.517	(0.247)	-0.483	(0.236)
St. market knowledge: high	-0.002	(0.046)	-0.109	(0.194)	-0.107	(0.192)
St. market knowledge: very high	0.054	(0.071)	-0.141	(0.354)	-0.250	(0.336)
Has traded stocks	-0.047	(0.024)	0.008	(0.100)	0.141	(0.100)
Has studied economics	0.016	(0.022)	0.149	(0.099)	0.090	(0.096)
Mean <sub>1</sub>	-0.057	(0.036)	0.022	(0.155)	0.104	(0.151)
Standard Deviation <sub>1</sub>	0.031	(0.020)	-0.008	(0.086)	-0.052	(0.084)
RML <sub>1</sub>	-0.034	(0.020)	-0.020	(0.084)	0.038	(0.082)
RSL <sub>1</sub>	0.006	(0.004)	0.007	(0.017)	-0.006	(0.016)
1/K <sub>1</sub>	0.092	(0.022)	-0.144	(0.116)	-0.401	(0.107)
Return Chasing <sub>1</sub>	0.074	(0.049)	-0.171	(0.223)	-0.405	(0.216)
_cons			2.314	(2.927)	-0.735	(2.846)
Mean	0.245		2.909		2.196	
N	1592		1202		1592	
chi2	426.706					
r2			0.080		0.200	

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

- Higher FL score, higher WTP
- Higher Self-assessed FL, lower WTP
- Perceived Ability to Apply Information increased WTP
- Expect Higher Return in Task 2 increases WTP

# Education Treatment and Outcomes

- We provide training on :
  - Diversification
  - Risk-adjusted returns (Sharpe ratios)
- What is the outcome of interest?
  - Can look at use of heuristics (moving away from 1/N, return chasing)
  - Can look at distance to Efficient frontier (RML and RSL)? But limited characterization, welfare depends on risk aversion (preferences)
  - Elicit using Multiple Price List Risk Aversion. Weight change in allocation by conditionnal distribution of risk aversion. Pr(welfare gain) and E(welfare gain).

# Difference-in-Difference and IV

Table 3: Effect of the Financial Education Intervention on Outcomes

	Performance metrics		Heuristic metrics		Welfare metrics	
	$\Delta$ RML	$\Delta$ RSL	$\Delta$ 1/K	$\Delta$ Chasing	$\psi^+$	$\bar{\psi}$
change not offered	-0.036	-0.321	0.253	0.3	0.406	-0.008
change offered	-0.410	-0.517	0.489	0.473	0.486	0.005
Diff.-in-Diff. ITT	-0.374	-0.196	0.236	0.173	0.080	0.014
	(0.325)	(0.661)	(0.057)	(0.079)	(0.023)	(0.006)
change not treated	-0.155	-0.335	0.277	0.307	0.439	0.002
change treated	-0.747	-0.758	0.931	0.734	0.548	0.009
Diff.-in-Diff. ATT	-0.592	-0.422	0.659	0.427	0.109	0.007
	(0.302)	(0.601)	(0.042)	(0.073)	(0.021)	(0.005)
IV ATT	-0.868	-0.456	0.717	0.445	0.185	0.032
	(0.753)	(1.533)	(0.142)	(0.189)	(0.053)	(0.013)
IV ATT (w. controls)	-0.996	-0.550	0.662	0.466	0.204	0.034
	(0.766)	(1.561)	(0.159)	(0.161)	(0.053)	(0.014)

- Intent-to-Treat: DD-ITT (compare eligibles to non-eligibles)
- Average effect on Treated:
  - DD-ATT (compare treated to untreated)
  - IV-ATT (use eligibility as instrument)

# Exploiting the WTP

- The (scaled) WTP is the probability of being treated
- Idea: Two respondents with the same WTP: one treated and one untreated. Compare outcomes.
- Matching strategy

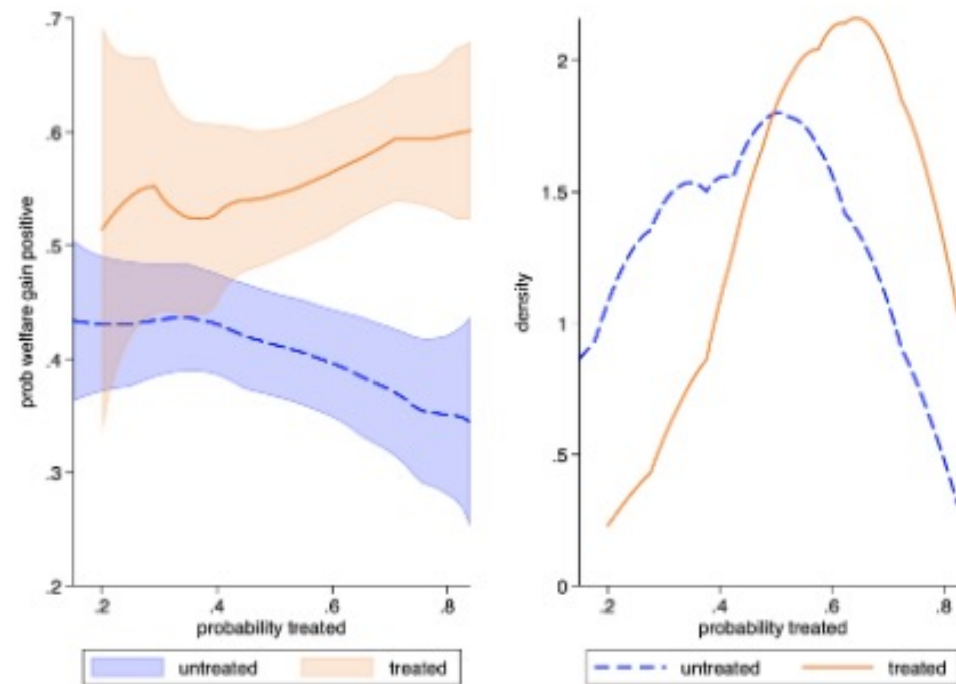
Table 5: Matching and Control Function Estimates of the Average Effect of the Intervention on those who Participated

	Performance metrics		Heuristic metrics		Welfare metrics	
	$\Delta$ RML	$\Delta$ RSL	$\Delta$ 1/K	$\Delta$ Chasing	$\psi^+$	$\bar{\psi}$
KNN matching (5)	-0.216 (1.061)	0.210 (2.119)	0.522 (0.102)	0.257 (0.159)	0.272 (0.067)	0.037 (0.014)
KNN matching (10)	-0.663 (0.717)	-0.959 (1.476)	0.511 (0.079)	0.317 (0.141)	0.244 (0.049)	0.024 (0.010)
Control Function	-0.818 (0.451)	-1.076 (0.899)	0.558 (0.063)	0.293 (0.128)	0.155 (0.031)	0.014 (0.008)
Control Fct. + $X$	-0.842 (0.456)	-1.101 (0.910)	0.572 (0.067)	0.309 (0.145)	0.153 (0.032)	0.013 (0.008)
NL Control Fct.+ $X$	-0.840 (0.457)	-1.083 (0.912)	0.574 (0.067)	0.301 (0.145)	0.153 (0.032)	0.013 (0.008)



Those with  
higher WTP  
gain more

Figure 2: Welfare Gains by the Probability of being Treated among the Treated and Untreated Respondents



# Take aways

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Financial literacy is limited in the population despite an increasingly larger responsibility put on consumers

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Various tools can be used to improve decision making. The desirability of each depends on a number of considerations.

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Evaluating how choices improve is a difficult task, especially when preferences are heterogeneous

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The market for advice and education probably works well for those who know what they don't know, and can apply advice-education. What about others?