

Project Title: Financial education on young German adults  
Proposal for a Research Grant

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**Principal Investigator**

**Yuri Pettinicchi, Ph.D.**

Post-doctoral Researcher  
Research Center SAFE  
House of Finance  
Grüneburgplatz 1  
60323 Frankfurt  
Germany  
Tel.: +49 69 798 30079  
Email: [pettinicchi@safe.uni-frankfurt.de](mailto:pettinicchi@safe.uni-frankfurt.de)

**Cooperating researchers:**

**Danilo Cavapozzi**

Assistant Professor of Economics  
University of Venice  
Email: [danilo.cavapozzi@unive.it](mailto:danilo.cavapozzi@unive.it)

**Mario Padula**

Associate Professor of Econometrics at the  
University of Venice  
Email: [mpadula@unive.it](mailto:mpadula@unive.it)

**Abstract**

The association between financial literacy and various saving outcomes is widely documented, but much less is known on the effect of the provision of financial education on financial literacy and investment attitudes. The research project is aimed at exploiting an experimental approach to evaluate the effects of financial education on young German adults. Standard on-line course on basic economic concepts is the format of the provision of financial education. We will evaluate the effects of the small-scale training on financial literacy and investment attitudes. The project outcomes will be fully comparable with the findings of a similar work performed on young Italian adults by Brugiavini *et al.* (2014).

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## 1. Research Proposal (2 pages)

We plan to conduct an experiment involving university students that will investigate the effects of a financial training course on their investment attitudes.

Motivation. Policy makers are promoting financial education, grounding their interventions on the assumption that more literate financial consumers avoid financial mistakes. While there is agreement among researchers about the degree of illiteracy among people and about the positive correlation between financial mistakes and illiteracy, it is still under debate what the causal effect of financial education on financial literacy and financial outcomes is.<sup>1</sup> Gale and Levine (2011) review most of the non-experimental evidence and suggest that financial education could improve financial outcomes. Hastings, Madrian, and Skimmyhorn (2013) point out that unobserved factors could upwardly bias the observed relationship between financial education and financial behavior in non-experimental research. Fernandes, Lynch, and Netemeyer (2014) provide a meta-analysis of 200 works on the topic and find out that non-experimental studies show significantly larger effect sizes than studies of the effects of financial education intervention. They suggest that omitted variables could produce overestimates of the effects.

Recent works on large scale interventions provide mixed evidence about the effects of financial education. On one hand, Bruhn, de Souza Leão, Legovini, Marchetti, and Zia 2013 demonstrate that high-quality financial education at youth can improve financial outcomes. With a pre-post experimental approach, Skimmyhorn (2013) evaluates the effect of a mandatory course for new US Army enlisted personal (average age \$21.5\$), providing moderately sized beneficial effects on a variety of economic outcomes, i.e. retirement savings and borrowing behaviors. On the other hand, Bruhn, Ibarra and McKenzie (2014) report minimal effect of a large scale financial education program in Mexico City.

Thus, it is still to be assessed if financial education offers an effective remedy again investment mistakes, and more evidence is to be collected – in particular about the behavioral aspects that can improve the financial outcomes.

Our research project contributes to the debate by focusing on youth education. We target this population group for two reasons: first, young people still have to face financial choices that could substantially affect their lifetime wealth. Second, it is reasonable to assume that they have had few market experiences, which would help in handling the reverse causality issue.<sup>2</sup>

Research Design. The experiment will use a graphical interface, equal for all the participants, to avoid heterogeneous provision of the treatment. To identify the effect of training on financial literacy and investment attitudes, we will perform a standard randomized controlled trial of financial education. We will randomly assign individuals to either the treatment or the control group. Individuals in the treatment group listen to a short course on basic economic concepts, covering interest compounding, inflation and risk diversification. The course will last for about 30 minutes and will be provided by a teacher. The three topics will be presented with the help of simple numerical examples and graphs. The control group will listen to an orthogonal course to financial matters.

As part of the intervention, we will ask a battery of questions on financial literacy and investment attitudes before and after the course to both groups. The questions will elicit the knowledge of basic financial concepts and the ability of individuals to utilize these concepts. The financial literacy questions will pertain the content of the course, namely interest compounding, inflation, and risk diversification. The investment attitude questions will refer to hypothetical situations in which the participants should take decisions. The questions will be

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<sup>1</sup> For a review see Hastings, Madrian, and Skimmyhorn (2013).

<sup>2</sup> If personal experience is the most important source of financial learning, the endogeneity makes the effects estimated in the empirical literature difficult to interpret.

engineered in such a way that the appropriate usage of the notions interest compounding, inflation, and risk diversification delivers the correct answer.

We will not ask exactly the same questions before and after the intervention to avoid the effect of re-taking a test in a short timespan. The answers to the questions will be however fully comparable.

**Target.** The experimental subjects are students at Goethe University Frankfurt, who are enrolled in BA or MA courses from a broad range of fields (social/life/natural sciences).

**Collection.** We will administer the intervention in two ways: in the field and in the lab using the same internet platform obtained with LimeSurvey.<sup>3</sup> On the internet platform, each question will appear on a separate page and the respondents will not be able to proceed if they do not provide an answer. In the field experiment, the subjects will receive an email, which directs them to a platform where the survey and the course are located. In the lab experiment, the subjects will operate on the computers individually and will listen to the courses through headphones.

To give the students the incentives to provide the best possible answer, we design a lottery awarding three last generation laptop computers. For the participation and for each correct answer, our experimental subjects will gain a ticket for the lottery. We think about one thousand participants for the field experiment. Participants to the lab experiment (150) will also receive a show-up fee of 10\$.

**Ethical Considerations.** Before running the experiment, the project will be approved by the ethics review committee of Goethe University that assures that none of the above considerations is violated. We are discussing with the University the possibility of releasing a public dataset, where all the requirements about confidentiality are satisfied.

**Research schedule.** The intended duration of the project is six months. We set four milestones. First, we design the questionnaire and the courses. Second, we implement the online platform with the graphical interface that we use to conduct the experiment. Then, we perform the experiment. The analysis of the collected data and the dissemination of preliminary results will conclude the project.

Table1: Summary of the tasks and resources

Stage	Task	Months	Workload Allocation
1	Questionnaire design Courses structure	1	Pettinicchi: 70% Cavapozzi: 15% Padula: 15%
2	Implementation of the on line platform Checks of the graphical interface	1	Pettinicchi: 50% RA: 50%
3	Collection of the data	2	Pettinicchi: 50% RA: 50%
4	Analysis of the data Writing the paper Dissemination of the results	2	Pettinicchi: 60% Cavapozzi: 20% Padula: 20%

**Expected outcome and impact:** We expect positive impact of the treatment on the financial knowledge and on the financial behavior captured by the hypothetical questions. Moreover, we are interesting to measure the impact on the self-reported knowledge that could be used as a proxy for the overconfidence induced by the education. This issue should be taken into account by policy makers when they promote financial education that does not provide appropriate self-evaluation abilities.

<sup>3</sup> LimeSurvey is an open source application to develop on-line surveys. For further details see <http://www.limesurvey.org/en/>.



## 2. Budget

Equipment. For the experiment, we plan to purchase space on servers for an amount of 600\$ in order to perform the online activities. We will use this space to install the software to run the experiment and to store the collected data.

Experimental data. A share of the budget will be devoted to the compensation of the participants: a show-up fee of 12\$ will be given to those who participate in the lab experiment (12 x 150 participants). In addition, lottery prizes will be awarded. For the participation and for each correct answer, the subjects will gain a lottery ticket for the lottery. We plan to award three last generation laptop computers (1400 x 3). The total cost of this experiment is estimated at 6.000\$.

Travel expenses. The travel budget will cover dissemination activities by the project team through participation in conferences and other networking activities. The funds are also meant to facilitate the exchange between the three collaborating researchers. We estimate the travel needs for each team member to cost 750\$, which makes a total of 2.250\$.

Publication expenses. We also apply for an allowance of 750\$ to cover publication expenses to be able to submit our publications to international peer-reviewed journals.

Table 2 summarizes the budget.

Table 2: Project Budget

Budget Item	Cost
Equipment	600
Experimental data	6.000
Travel expenses	2.250
Publication expenses	750
<b>Total</b>	<b>9.600</b>

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## Attachment

- Short CVs of Yuri Pettinicchi, Danilo Cavapozzi, and Mario Padula

**Yuri Pettinicchi** is a Post-Doc fellow (GO-IN EU program) at the Chair of Macroeconomics of Prof. Michalis Haliassos. He obtained his Ph.D from the University of Venice in 2012.

### *Working paper:*

- Financial literacy, information acquisition, and asset pricing implications, Economic Dept. University of Venice WP 3/2012.
- Providing financial education: a general equilibrium approach (with Mario Padula) CEPR Discussion Paper No. DP9556.

### *Working in progress:*

- Financial literacy, information acquisition, and limit market participation.
- The effect of financial education on literacy and behavior: evidence from the field (and from the lab) (joint work with Agar Brugiavini, Danilo Cavapozzi, and Mario Padula).

### *Grant and honors*

- Doctoral Fellowship: Ministry of Education, University and Research, Italy, 2007-10.
- Research fellowship: Portfolio Choices and Financial Literacy; 09/2010 - 09/2011 (within FIRB project).
- Research fellowship: Multi-country data base maintenance and Harmonized income measures; 11/2011 - 11/2013 (within SHARE project).
- GO-IN Fellowship: Enhancing consumer empowerment: implications for household finances. 11/2013 - 11/2015

**Danilo Cavapozzi** is Assistant Professor of Economics at the University of Venice. He obtained his Ph.D from the University of Padua. He does applied work on the econometrics of large micro-survey. His papers have appeared in the Journal of Royal Statistical Society. Series A, in Applied Economics and in Social Indicators Research.

**Mario Padula** is Associate Professor of Econometrics at the University of Venice. He obtained the Ph.D. in Economics at the University College London, and has worked at the University of Salerno before. He does research on pension reforms, saving and consumption, household portfolio choice, and micro-econometrics. He has contributed to design SHARE and several surveys on household saving and wealth. He has published on Journal of Public Economics and Journal of European Economic Association.

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## References

Bruhn, M., L. de Souza Leão, A. Legovini, R. Marchetti, and B. Zia, 2013, “*Financial Education and Behavior Formation: Large Scale Experimental Evidence from Brazil*” Presentation, World Bank, Washington, DC.

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Skimmyhorn, W., 2013, “Assessing Financial Education: Evidence From a Personal Financial Management Course”.