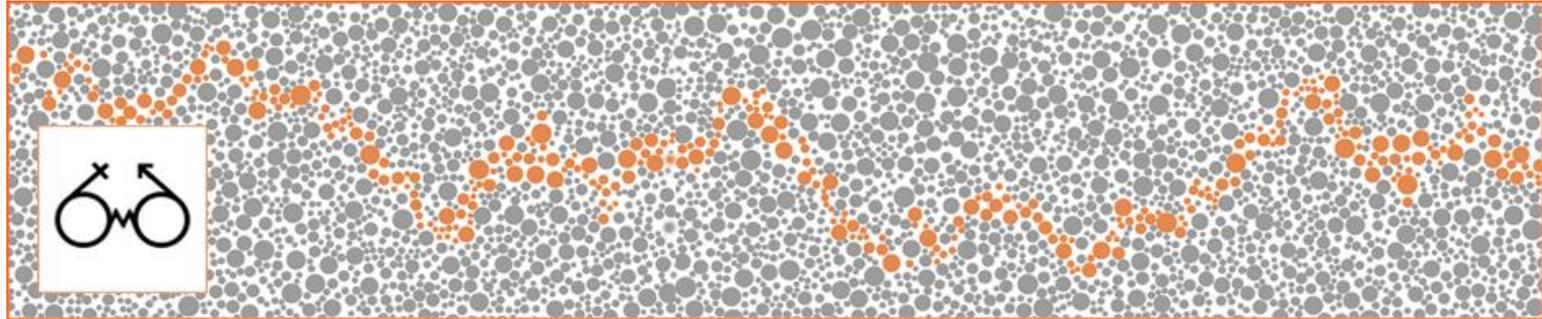


Gender & Finance Literature Review Series



Aatreyi Mitra

Research Assistant for Gender & Finance project

ESSEC Business School

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Gender & Finance Literature Review Series

Research presentation #2

Slides prepared by Aatreyi Mitra
Member of the [Gender & Finance](#) project
ESSEC Business School

About the paper :

Thomas Dohmen, David Huffman, Armin Falk, Uwe Sunde,
Jurgen Schupp & Gert G. Wagner (2011)
“Individual Risk Attitudes: Measurement, Determinants &
Behavioral Consequences”



The Problem

- Is the willingness to take risk related to:

❖ Gender

❖ Age

❖ Height

❖ Parents

❖ Income



Sources of Data

German Socio-Economic Panel (SOEP)

- First Source of Data
- Measures risk attitudes
- 22,000 individuals, 11,803 households surveyed in 2004
- Answered a survey

Sample

- Second Source of Data
- Drawn from the population of SOEP
- 450 individuals
- Participated in a Field Experiment



Methodology for SOEP

Dohmen and others (2011) surveyed 22,000 Adult Germans asking them 2 major questions

- 1) General Risk Question: “How willing are you to take risks, in general?”. They had to answer in a scale from 0 to 10.



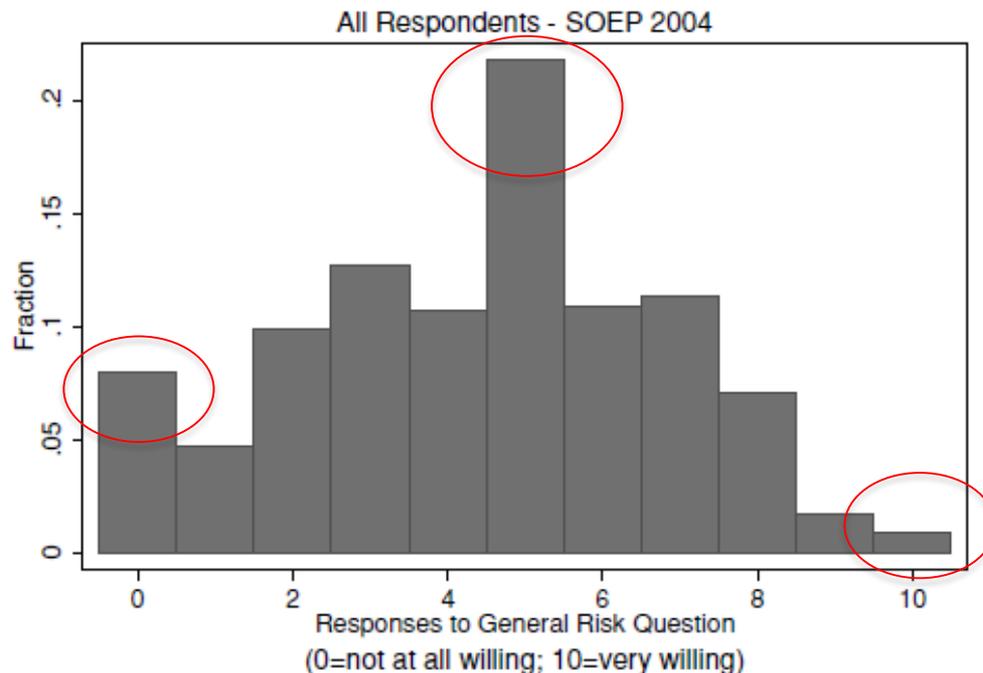
- 2) Contextual Risk Question: “How willing are you to take risks in the following contexts?”

Context
Car Driving
Financial Matters
Sports & Leisure
Health
Career



Response to the General Risk Question

- *The graphical representation of the answers given by the respondents show that majority respond as 5 as their willingness to take risk in general.*
- *It is also interesting that the smallest fraction choose 10 while a somewhat larger number of respondents (7%) choose 0 as their willingness to take risk.*





Regression on the General Risk Question

- *Dohmen and others (2011) in their study carry out regression with the dependent variable as the response to the General Risk Question.*

TABLE 1. Primary determinants of general risk attitudes.

	Dependent variable: willingness to take risks in general					
	(1)	(2)	(3)	(4)	(5)	(6)
Female	-0.591*** [0.043]	-0.613*** [0.046]	-0.614*** [0.049]	-0.618*** [0.046]	-0.605*** [0.047]	-0.614*** [0.056]
Age (years)	-0.035*** [0.001]	-0.034*** [0.001]	-0.034*** [0.001]	-0.028*** [0.001]	-0.027*** [0.001]	-0.020*** [0.003]
Height (cm)	0.030*** [0.003]	0.029*** [0.003]	0.027*** [0.003]	0.026*** [0.003]	0.027*** [0.003]	0.016*** [0.003]
<i>Abitur</i> mother		0.241*** [0.071]	0.244*** [0.078]	0.247*** [0.071]	0.281*** [0.074]	0.162* [0.085]
<i>Abitur</i> father		0.286*** [0.054]	0.256*** [0.060]	0.234*** [0.054]	0.240*** [0.056]	0.035 [0.064]
Log(household income in 2002)	No	No	Yes	No	No	Yes
Log(household income 2003)	No	No	No	Yes	No	No
Log(household income 2004)	No	No	No	No	Yes	Yes
Other controls	No	No	No	No	No	Yes
Log sigma	0.85*** [0.005]	0.84*** [0.006]	0.84*** [0.006]	0.84*** [0.006]	0.83*** [0.006]	0.81*** [0.007]
Log pseudo-likelihood	-47,456	-42,323	-36,829	-42,240	-39,052	-31,666
Observations	21,785	19,463	16,948	19,463	17,998	14,773

- *Explanatory variable: Column 1 takes Gender, age, height,*
- *Column 2 takes in to consideration if the mother and father are educated (*Abitur* is the high school examination in Germany)*
- *Column 3, 4 & 5 takes the explanatory variable of whether the individual had household income in 2002, 2003 or 2004.*
- *Column 6 takes the explanatory variable of household wealth and income, characterized by marital status, nationality, employment etc.*
- *Standard deviation =2.4*



Results from the General Risk Question

Gender

- Women are less willing to take risk than men.

Age

- The willingness to take risk decreases with age.

Height

- The willingness to take risk increases with height.

Parents

- Parents with higher education positively affect risk affinity.

Income

- Income is significantly and positively correlated to the will to take risk.

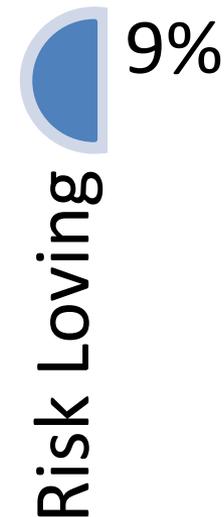
Wealth

- Wealth is significantly positively correlated to the will to take risk.



Experimental Validation of Survey

- *Can survey data imply actual risk taking behavior?*
- *Lottery experiment conducted on 450 individuals as similar as the SOEP population*
- *Observation:*





Regression Study & Results

- *Regression carried out on responses with value of safe option as dependent variable*

Dependent variable: value of safe option at switching point

	(1)	(2)	(3)
Willingness to take risk in general	0.611*** [0.123]	0.484*** [0.125]	0.401*** [0.131]
Controls for gender, age, height	No	Yes	Yes
Other controls	No	No	Yes
Constant	5.919*** [0.661]	-5.923 [7.916]	-14.287 [10.724]
Log sigma	1.867*** [0.037]	1.848*** [0.037]	1.736*** [0.040]
Log pseudo-likelihood	-1,348	-1,341	-1,111
Observations	450	450	383

- *Explanatory variable: Column 1 does not take any other control element.*
- *Column 2 takes into consideration gender, age, height.*
- *Column 3 takes the explanatory variable whether the individual specifics like parents, income, wealth, etc.*
- *Results are same as what is found by SOEP General Risk Question Analysis.*



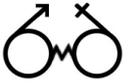
Risk Attitudes in Different Domains

Conducting regression study on the SOEP responses to other contextual questions, it is found that:

- Women are lower risk takers than men especially with respect to driving and financial matters.
- Older members have decreasing will to take risk especially in driving, sports and career.
- Taller individuals are more willing to take risks in all fields.
- Father's education positively affects risk taking in all contexts while mother's education has an impact in sports and career.

TABLE 3. Primary determinants of risk attitudes in different domains of life.

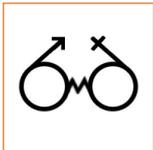
	Dependent variable: willingness to take risks in:					
	General (1)	Car driving (2)	Financial matters (3)	Sports/ Leisure (4)	Career (5)	Health (6)
Female	-0.611*** [0.046]	-1.071*** [0.059]	-0.770*** [0.052]	-0.629*** [0.053]	-0.538*** [0.060]	-0.671*** [0.055]
Age (years)	-0.034*** [0.001]	-0.050*** [0.002]	-0.025*** [0.001]	-0.063*** [0.001]	-0.059*** [0.002]	-0.036*** [0.001]
Height (cm)	0.029*** [0.003]	0.033*** [0.004]	0.029*** [0.003]	0.034*** [0.003]	0.038*** [0.004]	0.018*** [0.003]
Abitur mother	0.246*** [0.071]	0.043 [0.095]	0.137 [0.086]	0.268*** [0.085]	0.289*** [0.093]	0.09 [0.091]
Abitur father	0.287*** [0.054]	0.143** [0.070]	0.396*** [0.063]	0.558*** [0.064]	0.347*** [0.074]	0.217*** [0.070]
Log sigma	0.84*** [0.006]	1.03*** [0.007]	0.95*** [0.007]	0.97*** [0.006]	1.07*** [0.007]	1.01*** [0.007]
Log pseudo-likelihood	-42,311	-37,716	-37,736	-40,649	-38,248	-40,718
Observations	19,463	18,337	19,297	19,211	17,707	19,456



Cross-Context Stability in Risk

Comparing risk attitudes in different contexts Dohmen and others (2011) rank the willingness to take risk from greatest to least:





Risky Behavior in Specific Situations

Further to the SOEP results, Dohmen and others (2011) show in their study how the participants act in specific scenarios:

Situation	Corresponding Context
Portfolio Choices	Financial Matters
Participation in sports	Sports & Leisure
Smoking	Health
Self- Employment	Career

Regression studies show that behavior in a specific situation is positively correlated to the response to the corresponding context question.



Implications

- *Dohmen and others (2011) in their study, find that gender, age, height and parental education have an impact on the willingness to take risk.*
- *Risk attitudes are relatively stable across contexts.*
- *The willingness to take risk explains risky behavior in specific situations. For example, a person who is a high risk taker in health is likely to take up smoking.*

Scope

- *It is further open to discussion if gender difference in willingness to take risk can explain why women prefer low compensation schemes.*
- *The age affect to risk affinity may impact investing on a macro level, making it more conservative.*
- *If parents' level of education positively affects risk taking behavior, it might be interesting to explore how education policies can be modified for better economic results.*



Women and Risk: What did we learn?

- *Dohmen and others (2011) find that women have a lower willingness to take risk than men.*
- *It was found that people are more risk averse in financial decision-making compared to decisions concerning career, sports, driving and health.*
- *Given the above two it is highly likely that women in finance have chosen this field with greater confidence and are more likely to calculate their decisions more carefully in order to avoid highly risky situations.*



References

Do you want to learn more?

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Twitter: [@GenderFinance](#)
Facebook: [Gender & Finance](#)
Website: www.genderfinance.net
- François Longin
E-mail: longin@essec.edu
Website: www.longin.fr
- Estefania Santacreu-Vasut
E-mail: santacreuvasut@essec.edu
Website: santacreuvasut.com
- Aatreyi Mitra
E-mail: aatreyi.mitra@essec.edu





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