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**Working Paper**

## Why are economists so different? Nature, nurture, and gender effects in a simple trust game

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# DISCUSSION PAPER

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Andrea Müller

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# Why are Economists so Different? Nature, Nurture and Gender Effects in a Simple Trust Game\*

Justus Haucap<sup>†</sup>    Andrea Müller<sup>‡</sup>

March 2014

## Abstract

We analyze the behavior of 577 economics and law students in a simple binary trust experiment. While economists are both significantly less trusting and less trustworthy than law students, this difference is largely due to differences between female law and economics students. While female law students are already different in nature (during the first term of study) from female economists, the gap between them also widens more drastically over the course of their study compared to their male counterparts. This finding is rather critical as the detailed composition of students is typically neglected in most experiments.

JEL-classification: A12, A22, C35, C91

Keywords: Gender Effects, Trust Game, Economists, Nature, Nurture

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# 1 Introduction

Economists are different from most other people. This is not so much a hypothesis anymore, but can safely be considered a received wisdom by now. Ever since Marwell and Ames (1981) conducted their famous experiment on the free-riding of economists, there has been a rather extensive body of literature on the forms as well as on the sources of differences between economists and other individuals. The overwhelming majority of papers finds that economists do not only hold different values and views of the world (see, e.g., Gandal et al., 2005; Haferkamp et al., 2009; Haucap and Just, 2010; Jacob et al., 2011), but also report that economists are more selfish and less trustworthy than others (see, e.g., Carter and Irons, 1991; Frank et al., 1993, 1996; Frank and Schulze, 2000; Lundquist et al., 2009). A small minority of papers has found the opposite though (see, e.g., Yezer et al., 1996). With respect to trust games economists are typically found to be both less trusting and less trustworthy than other people.

Major parts of the literature on the behavior of economists focus on the question whether economists are different by nature even before they begin their studies, the argument being that economics students self-select into the study of economics (see, e.g., Carter and Irons, 1991; Frey and Meier, 2005; Cipriani et al., 2009), or whether students that study economics adopt different values or patterns of behavior over the course of their studies - the so-called nurture hypothesis (see, e.g., Stigler, 1959; Scott and Rothman, 1975; Haucap and Just, 2010). Haucap and Just (2010) provide evidence for the presence of nature effects which are strengthened through nurture. For a survey of much of the literature on the differences between economists and other people also see Kirchgässner (2005).

In another and almost completely unrelated stream of economic literature, a probably even less controversial finding has been reported and analyzed, namely that women are different and behave differently from men. The study of gender effects has been especially popular in the experimental and behavioral economics literature. As the excellent survey by Croson and Gneezy (2009) reports, an almost received wisdom is now that, if gender effects are found at all, women tend to be more careful (or risk-averse) and, therefore, less trusting than their male counterparts. At the same time, females tend to be more trustworthy (once they are trusted by others) if gender effects can be identified (see, e.g., Croson and Buchan, 1999; Schwieren and Sutter, 2008; Chaudhuri and Gangadharan, 2007). More recent surveys by Rau (2012) on trust games and by Ergun et al. (2012) on both trust and deception games basically support this view, even though some studies do not find any gender

effects (see, e.g., Clark and Sefton, 2001).

Surprisingly enough, there has been, to the best of our knowledge, hardly any literature which combines these two strands of research even though some questions appear to be obvious such as: Are female economists predominantly female or predominantly economists or, put differently, do female economists behave more like typical economists (i.e., less trusting and also less trustworthy) or do they rather exhibit the behavior found to be typical for females in trust games (i.e., less trusting, but more trustworthy)? Given the literature above, a second question is obviously whether and how this behavior may be affected by studying economics. Interestingly, May et al. (2014) have recently found that male and female economists in the American Economic Association appear to differ rather substantially in their views on economic policy issues such as health insurance, education, and labor standards. These survey-based results already provide some evidence that male and female economists may differ.

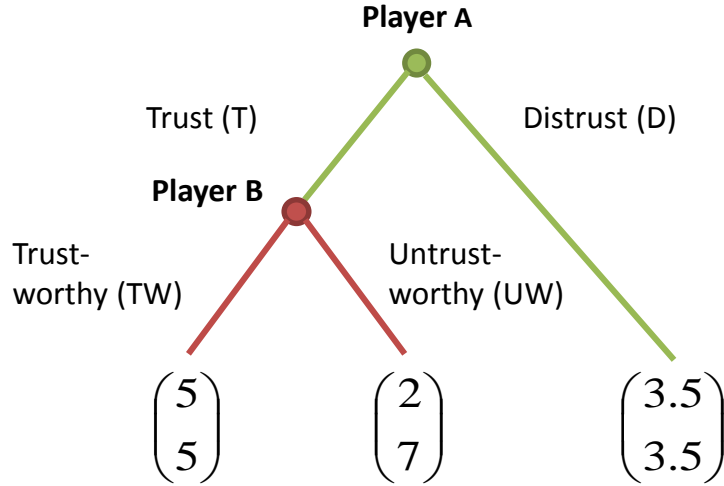
This paper aims at shedding some light on the questions just mentioned. For this purpose we have conducted a simple classroom experiment with (i) law students and economics students (ii) in both introductory and more advanced classes and found the following: Firstly, female economists are less trusting than both male economists and female (and male) law students, which may suggest that being female and an economist at the same time fortifies distrust in others. In addition, for female economics students the lack of trust appears to be further nurtured through the study of economics in an even stronger fashion than for male economics students. In sharp contrast, female law students become more trusting over the course of their studies. Secondly, and somewhat surprisingly, female economists are the least trustworthy group in our experiment both at the beginning of their studies and even more so when they are more advanced. We also find evidence for similar nurture effects among male economists and male law students who both become less trustworthy as their studies proceed, while we do not find these nurture effects for female law students who remain a highly trustworthy group.

The rest of this paper is organized as follows: The experimental design will be described in detail in Section 2 before the results are reported in Section 3. Section 4 offers a summary and concludes.

## 2 Experimental Design

The experiment is based on a sequential prisoner's dilemma game or binary trust game following Blanco et al. (2010). The game tree is given in Figure 1.

Two players, A and B, sequentially decide between two options. Player A



**Figure 1:** Game tree of the binary trust game

can decide either to trust (T) or distrust (D) player B, before player B can decide to behave either trustworthy (TW) or untrustworthy (UW). If player A chooses to distrust (D), the game ends and both players receive 3.50 EUR each. Player B's decision is irrelevant for the payoffs in this case. If player A decides to trust (T), player B's action is decisive for the payoffs of both A and B. If player B is trustworthy (TW), both players receive 5 EUR each, while player A is paid 2 EUR and player B 7 EUR if player B is untrustworthy (UW). Clearly, the only subgame perfect equilibrium of the game is (D, UW) so that a payoff of 3.50 EUR is predicted for each player. Note though that if, for some reason, player A does not expect player B to be a perfectly rational and selfish profit maximizer with certainty, player A's beliefs about player B's trustworthiness matter in our sequential trust game. In fact, trusting player B is optimal for player A if she believes that the probability of player B being trustworthy is at least 50 percent.<sup>1</sup>

The experiment was conducted in paper-based fashion during six different economics and law lectures in their usual class rooms at the University of Düsseldorf in 2012. Class room experiments were used in order to recruit typical economics and law students (without selection effects) in a natural

<sup>1</sup>Player A is indifferent between trust (T) and distrust (D) if

$$5p + 2(1 - p) = 3.50 \Leftrightarrow 3p = 1.5 \Leftrightarrow p^* = 0.5$$

environment where students usually also interact. The specific lectures were chosen so as to recruit economics and law students in their respective introductory classes as well as students with more advanced training. An overview of the respective lectures is provided in Table A.1 in the Appendix. Law students were chosen as a comparison group to economists since the absolute number of students is very similar and both economics and law have an almost equal percentage of male and female students. In contrast, most natural sciences have a male-female student ratio of about 4:1 while many other social sciences and humanities show almost the opposite ratio of male to female students.<sup>2</sup>

The experiment was conducted using the so-called strategy method, where subjects have to make a decision in both roles, as player A as well as player B. The final role (A or B) was later randomly assigned to individuals after they had marked their decision. Hence, only one of the players' own two choices was in the end decisive for individuals' payoffs.<sup>3</sup> Players were randomly matched after all choices had been made. The experiments were conducted in three steps: First, every student was given instructions with control questions to ensure that participants understood the game. Second, the experimenter distributed and collected (i) decision sheets where individuals marked their player A decision (T or D) and their player B decision (TW or UW) as well as a questionnaire on individual characteristics like gender, age, study information and questions on risk attitude and beliefs.<sup>4</sup> Third, the experimenter randomly assigned A and B roles to all students, randomly matched student pairs and then analyzed the data outside the class room while the students attended the lecture. After the lecture, students were paid according to their own and their assigned partner's choice.

The six experimental sessions resulted in an overall sample size of 577 students. All of them made their decisions in the role of player A and player B. 51 percent of the students are female, and 52 percent are economists. Hence, we have an almost equal split between the various groups. About two thirds of the participants were first-year students without previous training in economics or law. The share of students that have a minor in economics or have already

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<sup>2</sup>Psychology, for example, has a female student percentage of 86 percent in Düsseldorf, while mathematics only has 30 percent female students. The composition of the student pool at the University of Düsseldorf is summarized online at <http://www.hhu.de/home/universitaet/weiterfuehrend/die-universitaet-in-zahlen-und-fakten/die-universitaet-in-zahlen/studierendenstatistik.html>.

<sup>3</sup>Brandts and Charness (2011) compare outcomes of games using the strategy and the direct response method and find that in 25 out of 29 studies surveyed there was no significant difference between the two methods. We, therefore, use the strategy method in order to obtain more observations and also to enhance the understanding of the game as a whole, as students are forced to think through both players' decisions.

<sup>4</sup>The instructions, control questions, and the questionnaire are provided in Appendix B.



changed their field of study is small, one and nine percent, respectively.<sup>5</sup>

## 3 Results

### 3.1 The Trust Decision (Player A)

Descriptive results of the trust decision for economics vs. law students, male vs. female students, and first-year vs. advanced students are presented in Figure A.1 in the Appendix. Fewer economists and fewer female students tend to trust in their partner's trustworthiness than law students and male students (both significant at least at the 5 percent level).<sup>6</sup> These findings are pretty much in line with the literature on trust games in combination with gender issues<sup>7</sup> and almost replicate the trust results in Dasgupta and Menon (2011), who find in their study that 43 percent of the economists trust.

The results become more interesting once we further split the sample. The bars in Figure 2 represent the percentage of trusting individuals in the eight possible subgroups (first-year/advanced-male/female-law/economics students). Advanced female economists are the least trusting group with only 23 percent trusting while the fraction of trusting students is highest among advanced female law students (80 percent). The difference between these two groups is much smaller during the first year of study when 47 percent of first-year female law students trust and 39 percent of first-year female economics students.

Note that the fraction of trusting students drastically decreases by 16 percentage points (from 39 to 23 percent) among female economics students over the course of their study, while the fraction of trusting students heavily increases among female law students (from 47 to 80 percent). This may suggest that learning effects are rather strong among female students. For their male counterparts, the direction of movement is similar but on a much smaller scale. The trust level among male law students increases from 52 to 58 percent while it decreases among male economists from 53 to 44 percent.

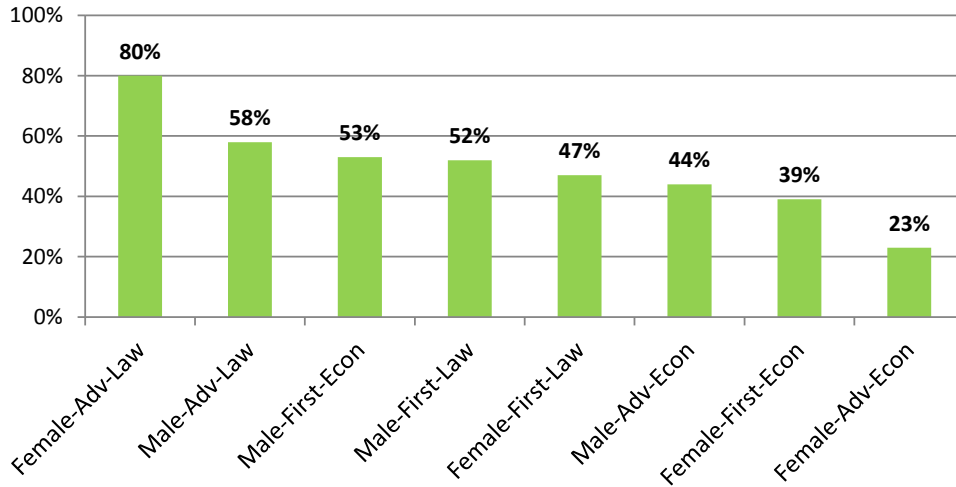
Also note that the trust levels are very similar between male law and economics students in the first year (52 and 53 percent - the difference is statistically not significant), and the two fractions of trusting students are higher than among both female law students in their first year (47 percent) and female

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<sup>5</sup>Further details are given in Table A.2 in the Appendix.

<sup>6</sup>We use the Chi Square test to test the difference between the categorical variables gender, major and study level.

<sup>7</sup>See Croson and Gneezy (2009), Table 3 for an extensive overview of experiments in trust games.



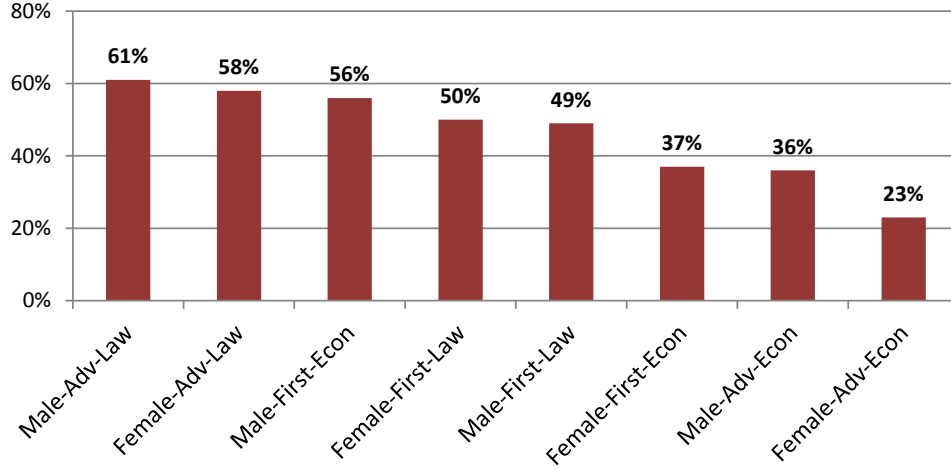
**Figure 2:** Share of trusting students within subgroups

economics students in their first year (39 percent). Hence, at the beginning of their studies gender effects appear to dominate any nature effects with respect to the field of study, i.e., females are primarily females and, secondly, economists (or lawyers) when they enter university.

### 3.2 The Trustworthiness Decision (Player B)

Figure A.2 in the Appendix summarizes player B's decisions (whether or not to be trustworthy) for economics vs. law students, male vs. female students, and first-year vs. advanced students. Not very surprisingly, economists are less trustworthy than law students (significant at the 1 percent level). This result is comparable to Dasgupta and Menon (2011). More surprisingly, 49 percent of the male students are trustworthy, but only 41 percent of the female students in our game (significant at the 5 percent level). This finding contrasts with results from other trust games, summarized in Croson and Gneezy (2009), which typically find women to be more trustworthy than men. Finally, first-year students are more trustworthy than advanced students (significant at the 5 percent level).

As before, the detailed analysis of our eight subgroups (first-year/advanced-male/female-law/economics students) provides some deeper insights. The results are summarized in Figure 3. As can be easily seen, advanced female economists are not only the least trusting group (when acting as player A), but also the least trustworthy one. Only 23 percent of the advanced female economics students decide to be trustworthy while among first-year female



**Figure 3:** Share of trustworthy students within subgroups

economists 37 percent still act trustworthily. Similarly, the level of trustworthiness declines among male economics students from 56 percent among first-year male economics students to 36 percent among advanced male economics students. Note that while the decline is stronger in absolute terms among male economists, when compared to their female economist companions (-20 percentage points for males, -14 percentage points for females), the relative decline is similar (35 percent for males, 37 percent for females). In contrast, trustworthiness increases among law students. First-year female law students decide to be trustworthy in 50 percent of all cases (compared to 49 percent among their male colleagues) while the respective figures for advanced law students are 58 (female) and 61 (male) percent. Hence, with respect to the trustworthiness decision, there do not appear to be differences in learning between male and female students once we control for their field of study.

### 3.3 Regression Analysis

In order to isolate the effects of gender, subject and progress of study that affect trust and trustworthiness among students, we estimate a seemingly unrelated bivariate probit model<sup>8</sup> with standard errors clustered at the class level where  $i$  represents the corresponding student.

<sup>8</sup>We use this method as the two decisions are binary choices, but made by the same student. In order to avoid correlation of the error terms we use a bivariate probit model. The test for a bivariate model being necessary is given in the last row of Table 1. As can be seen, the null hypothesis ( $\rho = 0$ ) can be rejected at the 1 percent significance level.

$$\begin{aligned}
Decision_i = & \beta_1 FemaleFirstEcon_i + \beta_2 FemaleAdvEcon_i + \beta_3 MaleFirstEcon_i \\
& + \beta_4 MaleAdvEcon_i + \beta_5 FemaleFirstLaw_i + \beta_6 FemaleAdvLaw_i \\
& + \beta_7 MaleAdvLaw_i + \sum_{k=8}^K \beta_k Controls_i + u_i
\end{aligned}$$

The two decisions are estimated in two separate regressions (*A decision* and *B decision*). Male first-year law students (*MaleFirstLaw*) serve as the reference category. The coefficients displayed are average marginal effects. Hence, they can be interpreted as the percentage change associated with each respective subgroup compared to male first-year law students. Furthermore, we include control variables such as the student's age (*Age*), their risk attitude (*Risk*), whether they actually study or have in the past studied economics as a minor (*Minor\_Econ*)<sup>9</sup>, whether they had a course with economics content in high school (*Econ\_School*), whether they have changed their field of study in the past (*Study\_Change*), whether the number of students in the class exceeds 50 (*Sizemore50*) and the student's belief about the fraction of untrustworthy students in their particular class (*Beliefs*). The latter was only included in the regression on the trusting decision (player A). The results are summarized in Table 1.

The regression analysis confirms what we have seen in our descriptive analysis. Advanced female economists are the least trusting subgroup, followed by first-year female economics students. While the trusting behavior of male first-year economics students is statistically not different from first year male law students (as inspection of Figure 2 already suggests), the male economists' trust vanishes as their studies progress. Hence, for both male and female economics students we find a nurture effect regarding their trusting decision, while we only find a nature (or self-selection) effect for female economics students who are already significantly less trusting when they take up their studies. Among law students we find that female law students trust less than their male counterparts when they enter university, but more when they have advanced in their study. For law students, we can only identify learning effects for female students. With respect to our control variables it is not surprising that beliefs about an increasing fraction of untrustworthy students in the class and a larger class size decrease the likelihood to trust. Furthermore, older students have a stronger tendency to trust. All other control variables exhibit statistically insignificant coefficients.

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<sup>9</sup>Note that this applies to about two percent of the law students (one percent of all students, but obviously only applicable to law students, and not to economists).

**Table 1:** Bivariate Probit regression of trust and trustworthy decision

	A decision	B decision
Female-First-Econ	- 0.110*** (0.03)	- 0.149*** (0.024)
Female-Adv-Econ	- 0.267*** (0.03)	- 0.250*** (0.043)
Male-First-Econ	- 0.014 (0.018)	0.083*** (0.008)
Male-Adv-Econ	- 0.103** (0.041)	- 0.112*** (0.013)
Female-First-Law	- 0.047*** (0.004)	0.000 (0.005)
Female-Adv-Law	0.153** (0.066)	0.013 (0.067)
Male-Adv-Law	- 0.015 (0.07)	0.116*** (0.035)
Age	0.015*** (0.004)	0.005 (0.003)
Minor_Econ	0.069 (0.043)	- 0.298** (0.133)
Risk	0.001 (0.001)	0.000 (0.001)
Econ_School	- 0.033 (0.029)	- 0.063 (0.042)
Study_Change	- 0.068 (0.071)	0.043 (0.057)
Sizemore50	- 0.030** (0.013)	- 0.014 (0.03)
Beliefs	- 0.005*** (0.001)	- -
No of obs	549	549
Wald test of $\rho = 0$	$\chi^2 = 8.54$	Prob> $\chi^2 = 0.0035$

Note: Seemingly unrelated bivariate probit regression with clustered standard errors; average marginal effects displayed; reference category for interactions: Male-First-Law; A-decision=1 is the trusting possibility and B-decision=1 is the trustworthy choice; Standard errors in parentheses; \*\*\* significant at 1 percent level \*\* significant at 5 percent level \* significant at 10 percent level.

Regarding the trustworthiness decision, the descriptive impressions of Figure 3 are basically also supported by our regression analysis. Among economists, female students are the main driving force behind the lower trustworthiness levels compared to law students. Advanced female economists are 25 percent less likely to be trustworthy than a fellow advanced female law student, and even first-year female economics students are 15 percent less likely to be trustworthy than their fellow first-year female students of law. For male students, the comparable figures show that the probability of an advanced male economics student being trustworthy is about 22 percent lower than for an advanced male law student. Somewhat surprisingly, among male first-year students the likelihood of an economist being trustworthy is about 8 percent higher than for a law student. Note, however, that only male law students become more trustworthy as their studies proceed, while we do not find a similar learning effect for female law students. Among the control variables a minor in economics is associated with a reduction of the likelihood to be trustworthy of about 30 percent (statistically significant at the 5 percent level).

A further pairwise comparison of the regression coefficient shows that differences between female law and economics students are much larger than those between male students. This finding already applies to first-year students, but the gap widens as the students progress in their respective studies. Regarding the trust level (player A), the difference in the coefficients for first-year female economics and law students is  $-0.110 - (-0.047) = -0.063$  while there is statistically no difference between the trust levels of first-year male law and economics students. The gap widens between advanced students, where the difference is  $-0.267 - 0.153 = -0.420$  for female economics and law students and  $-0.103$  for their fellow male students. A similar pattern can be observed regarding trustworthiness levels: Among first-year students, female economists are about 15 percent less likely to be trustworthy than female law students, and this number increases to 25 percent among advanced female students. Again, the comparable differences between male economics and law students are 0.083 among first-year students and  $-0.112 - 0.116 = -0.228$  among advanced students. Hence, we find that differences in the behavior of female law and economics students tend to be larger than those between male students. For both male and female students these differences increase as students progress with their respective studies.

Quite generally, our results suggest that both nature and nurture effects are at work when explaining levels of trust and trustworthiness among economists, but that nurture or learning effects appear to be more pronounced among female economists.

## 4 Conclusion

This paper has analyzed the behavior of 577 economics and law students in a simple binary class-room trust experiment. While economists are both significantly less trusting and trustworthy than law students, this difference is initially largely due to differences between female law and economics students. While female law and economics students are already different in nature (during the first term of their respective studies), the gap between them also widens more drastically over the course of their study compared to their male counterparts with respect to their trust level. Regarding trustworthiness we find nurture effects for both male and female economists which made them less trustworthy and more selfish, while we find an opposite nurture effect for male law students. In our view these findings are rather critical as the detailed composition of students is typically neglected in most experiments reported in the economics literature.

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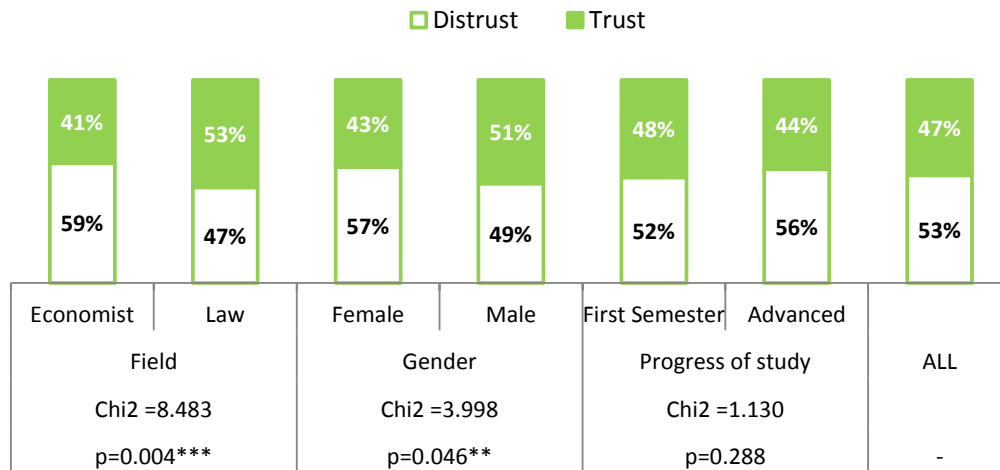
## Appendix A

**Table A.1:** Overview over all Sessions

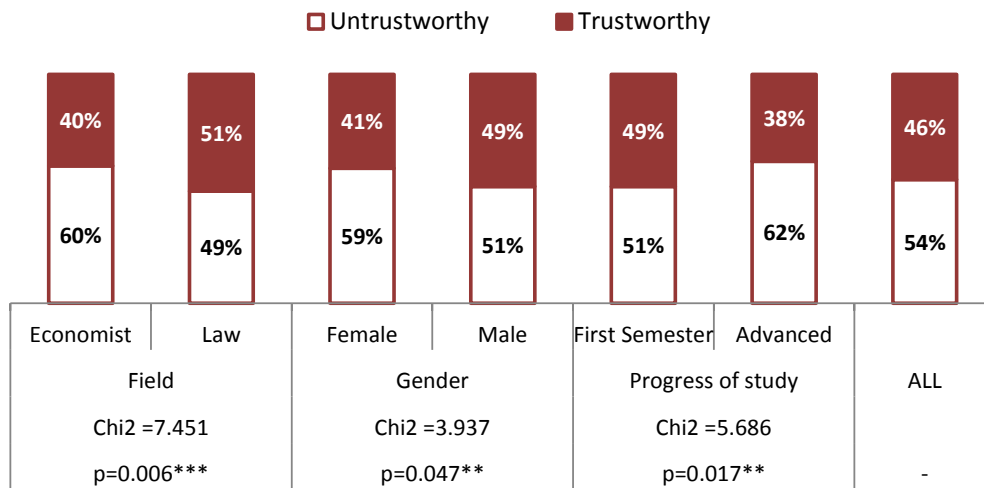
	Course	Major	Students	Term
Session 1	Economic Policy	Economics	85	Summer 2012
Session 2	Economic Policy	Economics	36	Summer 2012
Session 3	Municipal Law	Law	48	Summer 2012
Session 4	German Civil Code	Law	231	Winter 12/13
Session 5	Microeconomics	Economics	99	Winter 12/13
Session 6	Microeconomics	Economics	79	Winter 12/13

**Table A.2:** Summary statistics

Variable	Description	Obs	Mean	Std. Dev.	Min	Max
A decision	Dummy (1=T)	577	0.47	0.50	0	1
B decision	Dummy (1=TW)	577	0.45	0.50	0	1
Economist	Dummy	577	0.52	0.50	0	1
Female	Dummy	577	0.51	0.50	0	1
#Semesters	Absolute	575	2.11	1.80	1	9
First semester	Dummy	577	0.67	0.47	0	1
Age	Absolute	573	21.30	2.84	16	44
Minor_Econ	Dummy	556	0.01	0.10	0	1
Risk	Absolute amount	575	36.49	31.80	0	100
Econ_School	Dummy	577	0.33	0.47	0	1
Study_Change	Dummy	575	0.09	0.29	0	1
Sizemore50	Dummy	577	0.71	0.46	0	1
Beliefs	Percentage	574	68.91	24.66	5	100
Payoff	EUR	577	4.05	1.44	2	7



**Figure A.1:** A decisions by field, gender and progress of study



**Figure A.2:** B decisions by field, gender and progress of study

## **Appendix B (Instructions, Decision Sheet and Questionnaire in English)**

### **B.1 Instructions**

Welcome to the decision experiment!

#### **Introduction**

Please read the instructions carefully!

During the experiment you are making decisions that allow you to earn money. All amounts indicated are in Euros. The sum of money you earn depends on your decision and on the decision of other participants.

The experiment takes place anonymously so that you will not know the other participant with whom you interact. Except from the experimenter, only you will know the result and the amount of money you are going to earn.

Please note that from now on and during the whole experiment you are not allowed to communicate with other participants. If this is the case, we have to stop the experiment. If you have any questions, please raise your hand and the experimenter will come to you!

At the end of these instructions you will find some control questions. These control questions give you and the experimenter the last chance to check whether you understood the instructions for this experiment. Your performance in answering the control questions have no effect on your earnings from this experiment.

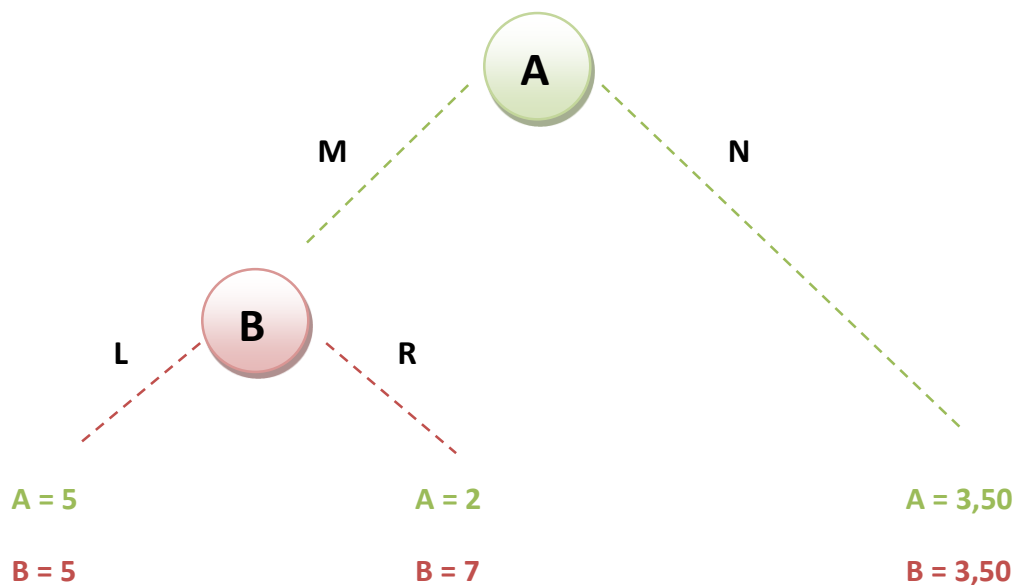
In a second step we will distribute the decision sheets. Decisions you state on this sheet are the foundation of your earnings.

The third and final stage of the experiment consists of completing the personal questionnaire truthfully.

After the course the realized earnings will be paid by the experimenter.

## Experimental proceedings

The foundation of the experiment is the following game:



Two players A and B sequentially decide between two alternatives. The numbers indicate how many € each player can earn with her decision. The top, green number show the earnings for player A, the lower red number the earnings for Player B.

Player A can choose between strategy "M" and strategy "N". If he opts for strategy "N", the decision of the other player becomes irrelevant, the game is therefore over, and both players receive 3.50 €. If player A chooses strategy "M," the decision of player B determines the payoffs of both players.

Player B can choose between strategy "L" and strategy "R". If she chooses "L", player A and player B earn 5 € each. If she opts for "R", player A earns 2 € and player B 7 €.

You and all other participants of the experiment will make one decision in the role of Player A and one decision in the role of Player B. Beforehand you do not know what choice the other player makes, and you are unaware what role is actually used to determine your earnings. After your decision, it is randomly determined with equal probability whether you are player A and the other player B, or the other player A and you are player B.

Please answer the following control questions.

## Control questions

### Question 1:

You are player **A**.

Assume that player B chooses strategy "R". What is your payoff if you...

(a) ... choose strategy "M"? \_\_\_\_\_ €      What will B earn? \_\_\_\_\_ €

(b) ... choose strategy "N"? \_\_\_\_\_ €      What will B earn? \_\_\_\_\_ €

### Question 2:

You are player **B**.

Assume that player A chooses strategy "M". What is the amount of money you earn if you...?

(a) ... choose "R"? \_\_\_\_\_ €      What will A earn? \_\_\_\_\_ €

(b) ... choose "L"? \_\_\_\_\_ €      What will A earn? \_\_\_\_\_ €

### Question 3:

You are player **B**.

What payoff do you earn for each of your corresponding decision possibilities, if player A chooses strategy "N"?

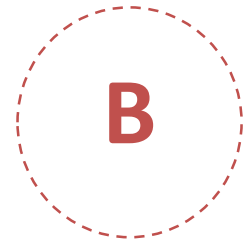
(a) For strategy "L"? \_\_\_\_\_ €      What will A earn? \_\_\_\_\_ €

(b) For strategy "R"? \_\_\_\_\_ €      What will A earn? \_\_\_\_\_ €

## B.2 Decision sheet

**Question 1:** You are player **B**, what decision do you make?

- ☐ I choose strategy "L"
- ☐ I choose strategy "R"



**Question 2:** You are player **A**, what decision do you make?

- ☐ I choose strategy "M"
- ☐ I choose strategy "N"



Thank you for your participation.

Please detach the participant-Id in the upper right corner and store it safely, as it is mandatory in order to receive your experimental payoff after the end of the lecture.



## B.3 Questionnaire

### Question regarding the experiment

What percentage of your fellow students do you think chooses decision "R" as player B?

\_\_\_\_\_ %

### Personal questions

1. You are ...?

☐ female ☐ male

2. How old are you?

\_\_\_\_\_

3. What is the level you currently take courses?

☐ Bachelor ☐ Master ☐ Diploma (German equivalent to Master)  
☐ State examination (German equivalent to LL.M) ☐ Other

4. How many semesters have you been studying?

\_\_\_\_\_

5. What is your study major?

\_\_\_\_\_

6. Do you take an economics-related class as a minor subject?

☐ yes ☐ no

If yes, which one? \_\_\_\_\_

7. Did you change subjects during your study?

☐ yes ☐ no

If yes, from which subject? \_\_\_\_\_

8. Did you take a course with an economic focus in your last two years of secondary school education? (e.g. Law and Economics, Politics,...)

☐ yes ☐ no

9. Imagine that you win 100 € in a lottery. You can deposit the whole amount, just a share or nothing in your bank account. The sum that you deposit will double with a probability of 50% or it will bisect with a probability of 50%.

Which sum will you pay into your account?

- ☐ Everything, I deposit 100 €  
☐ 80 €  
☐ 60 €  
☐ 40 €  
☐ 20 €  
☐ Nothing, I keep 100 €

**Thank you for your participation!**

## **Appendix C (Instructions, Decision Sheet and Questionnaire in German)**

### **C.1 Instruktionen**

Herzlich willkommen zu diesem Entscheidungsexperiment!

#### **Grundsätzliches**

Bitte lesen Sie diese Instruktionen sorgfältig durch!

Während des Experiments treffen Sie Entscheidungen, mit denen Sie Geld verdienen können, alle angegebenen Geldbeträge sind in Euro angegeben. Wieviel Geld Sie verdienen, hängt davon ab, welche Entscheidungen Sie treffen und welche Entscheidungen andere Teilnehmer treffen.

Das Experiment läuft anonym ab, das heißt, Sie erfahren nicht, mit welchem der anderen Teilnehmer Sie interagieren. Außer den Leitern des Experiments erfahren nur Sie Ihr Ergebnis und die Höhe des Geldbetrages, der an Sie ausbezahlt wird.

Bitte beachten Sie, dass Sie ab jetzt und während des gesamten Experiments nicht mit den anderen Teilnehmern sprechen dürfen! Sollte dies vorkommen, müssen wir das Experiment abbrechen. Wenn Sie Fragen haben, heben Sie bitte die Hand und einer der Leiter des Experiments wird zu Ihnen kommen!

Am Ende dieser Instruktionen finden Sie noch einige Kontrollfragen. Die Kontrollfragen geben Ihnen und den Leitern des Experiments dann die letzte Möglichkeit zu überprüfen, ob Sie die Regeln für dieses Experiment verstanden haben. Ihre Entscheidungen während der Kontrollfragen haben keine Auswirkung auf Ihren Verdienst aus dem Experiment.

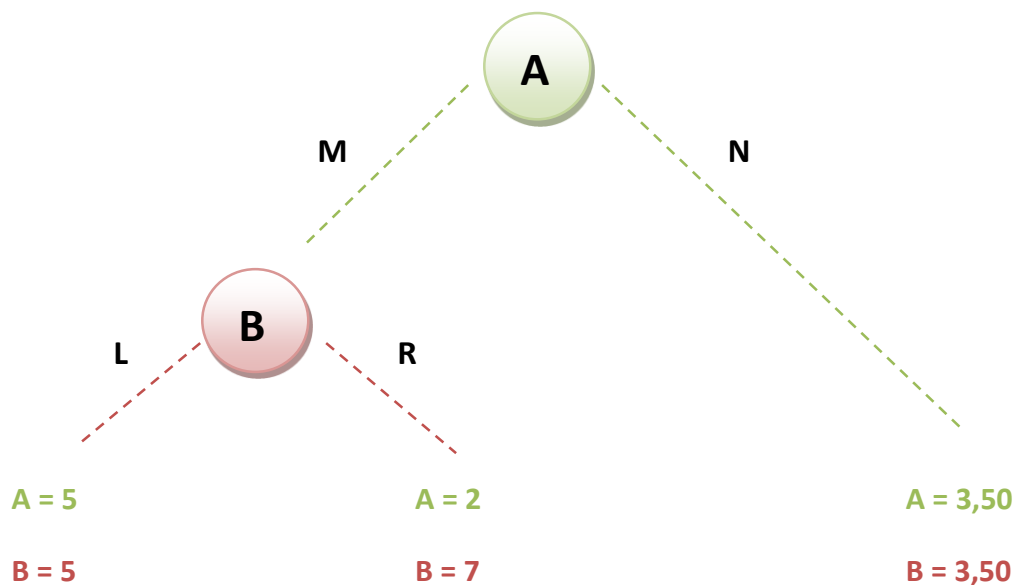
In einem zweiten Schritt werden wir Ihnen dann den Entscheidungsbogen austeilen. Ihre dort getroffene Entscheidung stellt die Grundlage Ihres Verdienstes dar.

Der dritte und letzte Teil des Experiments besteht darin, dass Sie den persönlichen Fragebogen wahrheitsgemäß ausfüllen.

Nach der Veranstaltung wird dann Ihr erzielter Gewinn an Sie ausbezahlt.

## Ablauf des Experiments

Grundlage des Entscheidungsexperiments ist folgendes Spiel:



Zwei Spieler A und B treffen nacheinander jeweils eine Entscheidung über zwei Alternativen. Die Zahlen in der Abbildung geben an wie viele € der jeweilige Spieler durch welche Entscheidung verdienen kann. Die obere, grüne Zahl ist dabei jeweils der Verdienst für Spieler A, die untere, rote Zahl der Verdienst für Spieler B.

Spieler A kann zwischen Strategie „M“ und Strategie „N“ wählen. Entscheidet er sich für Strategie „N“, so wird die Entscheidung des Mitspielers irrelevant, das Spiel ist somit beendet und beide Akteure erhalten jeweils 3,50 € als Verdienst. Wählt Spieler A die Strategie „M“, so ist der Entschluss des Spielers B entscheidend für die Auszahlungshöhe.

Spieler B kann sich zwischen Strategie „L“ und Strategie „R“ entscheiden. Wählt er „L“, so verdienen Spieler A und er selbst jeweils 5 €. Entscheidet er sich für „R“, so verdient Spieler A 2 € und er selbst 7 €.

Sie und alle anderen Teilnehmer des Experiments treffen nun jeweils eine Entscheidung in der Rolle des Spielers A und eine Entscheidung in der Rolle des Spielers B. Bei Ihren Entscheidungen wissen Sie nicht, welche Wahl der Mitspieler trifft, und Sie wissen auch noch nicht, welche Rolle tatsächlich zur Bestimmung Ihres Verdienstes verwendet wird. Nach Ihren Entscheidungen wird mit gleicher Wahrscheinlichkeit zufällig festgelegt, ob Sie Spieler A und der andere Spieler B, oder der andere Spieler A und Sie Spieler B sind.

Bitte beantworten Sie nun die nachfolgenden Kontrollfragen.

## Kontrollfragen

### Frage 1:

Sie sind Spieler **A**.

Gehen Sie davon aus, Mitspieler B habe sich für Strategie „R“ entschieden. Welche Auszahlung erwartet Sie also, wenn Sie ...

(a) Strategie „M“ wählen? \_\_\_\_\_ €      Was bekommt dann B? \_\_\_\_\_ €

(b) Strategie „N“ wählen? \_\_\_\_\_ €      Was bekommt dann B? \_\_\_\_\_ €

### Frage 2:

Sie sind Spieler **B**.

Gehen Sie davon aus, Mitspieler A habe sich für Strategie „M“ entschieden. Welchen Geldbetrag bekommen Sie, wenn Sie ...?

(a) „R“ wählen? \_\_\_\_\_ €      Was bekommt A? \_\_\_\_\_ €

(b) „L“ wählen? \_\_\_\_\_ €      Was bekommt A? \_\_\_\_\_ €

### Frage 3:

Sie sind Spieler **B**.

Welcher Verdienst erwartet Sie für Ihre jeweilige Entscheidung, wenn Mitspieler A die Strategie „N“ wählt?

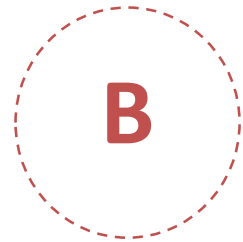
(a) Für Strategie „L“? \_\_\_\_\_ €      Was erhält A? \_\_\_\_\_ €

(b) Für Strategie „R“? \_\_\_\_\_ €      Was erhält A? \_\_\_\_\_ €

## C.2 Entscheidungsbogen

**Frage 1:** Sie sind Spieler **B**, welche Entscheidung treffen Sie?

- ☐ Ich entscheide mich für Strategie „L“
- ☐ Ich entscheide mich für Strategie „R“



**Frage 2:** Sie sind Spieler **A**, welche Entscheidung treffen Sie?

- ☐ Ich entscheide mich für Strategie „M“
- ☐ Ich entscheide mich für Strategie „N“



Vielen Dank für Ihre Teilnahme.

Bitte trennen Sie die Teilnehmernummer in der rechten oberen Ecke dieses Blattes ab und verwahren Sie diese gut, damit Ihnen am Ende der Veranstaltung Ihr Gewinn ausgezahlt werden kann.

### C.3 Persönlicher Fragebogen

#### Frage zum Experiment

Was glauben Sie, wieviel Prozent Ihrer Mitspieler haben in der Rolle des Spielers B Entscheidung „R“ gewählt? \_\_\_\_\_ %

#### Persönliche Fragen

1. Sie sind ...?

☐ weiblich ☐ männlich

2. Wie alt sind Sie?

\_\_\_\_\_

3. In welchem Studienabschnitt befinden Sie sich?

☐ Bachelor ☐ Master ☐ Diplom ☐ Staatsexamen ☐ Sonstiges

4. In welchem Fachsemester befinden Sie sich?

\_\_\_\_\_

5. Welchen Studiengang absolvieren Sie? (Bitte geben Sie nur Ihr Hauptfach an!)

\_\_\_\_\_

6. Studieren Sie einen wirtschaftswissenschaftlichen Studiengang als Nebenfach?

☐ ja ☐ nein

Wenn ja welches Fach? \_\_\_\_\_

7. Haben Sie im Laufe Ihres Studiums einen Studiengangwechsel vollzogen?

☐ ja ☐ nein

Wenn ja, von welchem Fach? \_\_\_\_\_

8. Haben Sie in den letzten zwei Jahren Ihrer Schulzeit einen Kurs mit wirtschaftswissenschaftlichem Schwerpunkt besucht? (z.B. Wirtschaft-Recht, Politik-Wirtschaft,... )

☐ ja ☐ nein

9. Stellen Sie sich vor, Sie gewinnen bei einer Lotterie 100 €. Dieses Geld können Sie ganz oder zum Teil bei der Bank anlegen oder aber komplett behalten. Der Betrag, den Sie anlegen verdoppelt sich entweder mit einer Wahrscheinlichkeit von 50 % oder halbiert sich mit einer Wahrscheinlichkeit von 50 %.

Welchen Geldbetrag würden Sie anlegen?

☐ Den ganzen Betrag von 100 €

☐ 80 €

☐ 60 €

☐ 40 €

☐ 20 €

☐ Überhaupt nichts, ich behalte die 100 €

**Vielen Dank für Ihre Teilnahme!**

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