MASTERARBEIT

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„Trust and Reciprocity Among The Baltic States: The Experimental Approach"

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1 Introduction

"Virtually every commercial transaction has within itself an element of trust,
certainly any transaction conducted over a period of time."

Kenneth J. Arrow,*1972*

Arrow's (1972) [2] introduction quote is a huge inspiration to investigate trust from the economic perspective. Unfortunately, it is often overlooked in the economic research. On the other hand, the field of trust based analysis is growing. Trust can be used as an exogenous variable to regress trade, portfolio investments, and foreign direct investment as shown by Guiso et al. (2009) [9]. They found statistically significant and positive impact of trust on the previously mentioned endogenous variables. Bottazi et al.(2009) [5] support hypothesis of trust importance on the investment. Their research was based on the data set of European venture capital investments. Analysis of micro dataset led to the conclusion that trust has statistically significant and positive effect on the investment decisions of the venture capital firms.

Trust itself is a hardly measurable variable. To begin the discussion on trust, the definition of it has to be derived. **Trust** can be understood as a **belief** about counterparts (future) actions, that he or she will act honestly, reliably or in your favor.

How to measure such a belief? One way is to run the survey and ask trust related questions. In order to use survey based measures in the analysis, one needs to map categorical variables (answers to trust related questions) i.e.: "a lot of trust", "some trust", etc., to the numeric form. Moreover, one faces a problem of the individual bias, the terms "a lot" and "some" have different meanings for different individuals. These problems lead to quite noisy and discontinue measure of trust. The experimental based measures could be used as more accurate representatives of trust, but there are some other issues related to them: experiments are not only more expensive than surveys, but they are also many times more difficult to organize, moreover, the decisions made in the experimental situations can be not only trust driven but also correlate other beliefs or social values besides trust. There is no ideal methodology on how to measure trust, but the discussion presented in this paper is based on the trust, measured the hard (experimental) way.

This thesis contributes to the understanding of trust among the three Baltic States: Estonia, Latvia and Lithuania. The collected experimental data on trust, reciprocity, as well as risk tolerance and other regarding preferences is analyzed.

The Baltic States are a very interesting region for such an experiment. Despite the similar historical path during the last 200 years, there are major differences among these three countries in

religion, language and even economics. Estonia is famous for being one of the most non religious countries in the World and this was also observed in the actual experiment. Latvians are not so homogeneous and significantly fewer of Latvians position themselves as non believers. Lithuanians are homogeneous in their religion beliefs, Catholicism is the dominant religion. Linguistic differences exist in the region too. Latvian and Lithuanian languages belong to the Baltic language family and are pretty similar to each other, whereas Estonian is the Finno-Ugric language, more similar to Finish than any other. At the time, when the actual experiment took place, the GDP per capita was highest in Estonia. The real GDP per capita was quite similar in Estonia and Lithuania but noticeable smaller in Latvia.

These three countries haven't had any major disagreements or have been involved in a war directly against each other during any period of time. One very memorable event called the Baltic Way took place on the 23rd of August 1989, when in total 2 millions of people formed a live chain to protest against the pact signed 50 years ago and according to which Europe was divided between two major powers: Germany and USSR. People from these countries stood hand in hand from Lithuanian capital Vilnius up to the Latvian capital Riga and then further to the Estonian capital Tallinn. In total this live chain was longer than 600 km (400 mi). It is the perfect example of togetherness and unity among the Baltic States. The results of trust experiment offer a lot of interesting insights on cross-cultural differences in trust and reciprocity, that are tested in this paper. Ex-ante one can expect that despite the unity among the three countries, those existing differences in mentioned cultural proxies and the countries' economical performances can result in different trust levels. The findings on differences in trust among distinct cultures are discussed in the next section. Moreover, the discrimination question, if one of the two foreign Baltic States is more trusted in each country, is raised and tested for in the gathered data.

This paper is organized as follows: in Section 2 the experimental findings on Trust Games and used experimental settings are discussed. In the later sections, the empirical study is introduced with a brief overview on the software, it is followed by the summarized statistics of answers to survey questions used in the experiment (Section 3). Lastly, the outcomes of three games played are analyzed and trust and reciprocity actions observed in the Trust Game are modeled (Section 4).

2   Theory and Findings on Trust Experiments

The experimental setting widely used in the research of trust is called Trust (or investment) Game. Berg et al[3] used it as early as 1995. Their two-stages sequential game involved two players, who were given $10 each. Player B pocketed his/her money, and player A had to make a decision on how many (if any) of his/her initial endowment ($10) to pass to player B. The sent money was tripled. If positive amount was sent, Player B had to decide how much to return from (0 to 3 times amount sent). Figure 1 shows the game and decision problems that both players are facing during this game.

Round I		**Round II**		**Outcome**
Player's A decision		Player's B decision		Player's A profit: $(e - s) + r$
$s \in [0, \ldots, e]$		$r \in [0, \ldots, 3s]$		Player's B profit: $(3s - r)$
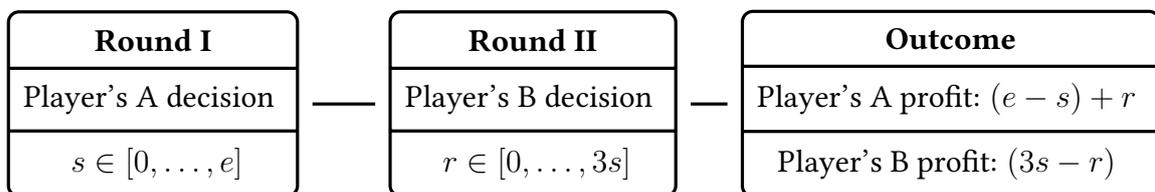
Figure 1: Graphical Representation of The Trust Game

Here, e is the initial resources of Player A (sender), s is the amount that this player chooses to pass to player B and r is the amount that player B (receiver) decides to return. Calculations of the final payoffs, when all decisions in round 1 and 2 are done, are shown for both players in the third rectangle from left to right.

2.1   Literature Overview of the Trust Game

Berg et al[3] as well as mostly every paper on Trust Game written by economists or game theorists raise a no-cooperation hypothesis. Zero amount sent by Player A is predicted by the backward induction principle. Sender at first round has to decide how many of his initial coins to give away to player B. **If** player A believes that receiver is rational and his/her actions are driven **only** by self regarding preferences, then it is reasonable to predict, that Player B returns zero coins in the second round, as in such a way he/she maximizes his/her own profit. It is believed that player A also cares only about his/her own payoff and any positive amount transferred by player A leads to the immediate loss because of the expected player's B actions in the second round. Even if such strategy portfolio is as well rationalized as is every subgame perfect Nash equilibrium, empirical studies contradict it. It was shown by Johnson et al.(2011) [11] in the meta-analysis of Trust

Game, that neither the senders tend to pass zero, nor the receivers always take advantage of their trustors in various experimental settings. Johnson et al.(2011)[11] reported the country specific descriptive statistics of average sent fractions. According to them, Sweden stands out with 74% average fraction sent(4 studies and total sample of 941 participants), where i.e. Austrian average was 62% (6 studies, total sample 508 participants), Germany - 51% (15 studies and total sample of 1315), whereas France and Italy average 43% each (9 studies with total sample of 1008 and 8 studies with total sample of 763 subjects, respectively). The return ratios in Europe vary from 0.108 to 0.542, with the average returned fraction 0.382 (53 observations with total N of 7596). A very natural question rises then: is the theoretical solution of this game wrong and if it is, then why? J.C. Cox(2004)[6] pointed out:

" *.. von Neumann and Morgenstern (1944, 1947) thought it necessary to simultaneously develop a theory of utility and a theory of play for strategic games. [..] In the absence of a focus by game theorists on utility theory, it is understandable that experimentalists testing the theory's predictions have typically assumed that agents' utilities are affine transformations of (only) their own monetary payoffs in the games.* "

This is one of the reasons why the empirical studies contradict the theoretical solutions of this game. The utility theory should be taken into account and assumptions about preferences should be made very carefully, while trying to explain both the behavior in each game and the assumptions. J.C. Cox(2004)[6] has also reported the positive transfers in the similar game to Trust Game, in which only player A (sender) makes the decision, he/she decides how much (if any) to transfer to another player and this transferred amount is tripled and stays by that player. There is no possibility to return any money. Such game is called the Dictator's game. Such transfers made by the dictator (Player A) leads to conclusion that senders' behavior is not only driven by belief (trust) that player B (receiver) acts in his/her favor and transfers profitable amount of money back. The existence of other regarding preferences in any game similar to Dictator's should be tested.

Before continuing with any further discussion on Trust Game and predictions, paper of P.Sapienza et al. (2013) [16] has to be mentioned. In their paper, two major methodologies of trust measurement were comprehensively compared: survey based World Values Survey questionnaire and experiment based sender's behavior in the Trust Game. Neither of these measurements was found to be an ideal approximation of trust, since survey based data is a quite noisy measure of trust, but on the other hand it still captures the belief part of trust. It was also shown that Sender's behavior in the Trust Game is not only selfishness driven by **only** one objective: to maximize personal profit, as it is often mistakenly assumed and expected in the wide range of experimental

literature. Other social norms and personal preferences of the player were shown to be important and statistically significant while modeling the sent amount. Correlation between Sender's actions and trustworthiness was also discussed. This discussion led to the conclusion that this correlation might occur in the homogeneous groups and vanishes in the large, heterogeneous groups.

P.Sapienza et al. [16] discussed the impact of the risk awareness and other regarding preferences (such as altruism) on sender's behavior. Discussion was based on the findings of D.S. Karlan(2005) [12] and J.C. Cox(2004)[6]. D.S. Karlan (2005)[12] had in his Trust Game experiment unusual database. The games were played among 864 members of a non-profit village banking organization in Peru. D.S.Karlan found evidence that "financially cautious" individuals, who save more money than spend, passed less coins in the Trust Game. Financially cautious individuals were classified as less willing to risk and significance of risk awareness in Trust Game was concluded. J.C. Cox(2004) [6] ran a "triadic design" experiment. Players were asked to play three games: Trust Game (A), Dictators Game (B) and Third game (C), in which both players were endowed based on the results of Trust Game (A) and only the second player, who was originally receiver in the Trust Game, made decision how much (if any) to transfer to the Player A. The last two games were played to control other-regarding-preferences(altruism, inequality awareness) and reciprocity in the sender's and receiver's behavior. P.Sapienza et al. (2013) [16] used those findings and ran an experiment controlling risk awareness and altruism with Social dilemma game and Lottery game. Significance of other-regarding-preferences and risk tolerance (measured by latter two mentioned games, respectively) in the sender's behavior was reported. Based on these results, sender's positive transfer of coins to Player B is not only driven by the belief that the counterpart will return profitable amount of money, it is more complicated and includes other regarding preferences, as well as risk tolerance. Even if the person does not expect profitable return with the high probability(this probability is zero in Dictators game and it is known to the sender), he/she might act based on own risk tolerance and other regrading preferences (inequality awareness, etc.). Therefore, the Social Dilemma Game and the Lottery game were included in the experiment implemented by the author of this thesis.

2.2   Social Dilemma Game

In the previous subsections mentioned Social dilemma game is demonstrated in Figure 2 :
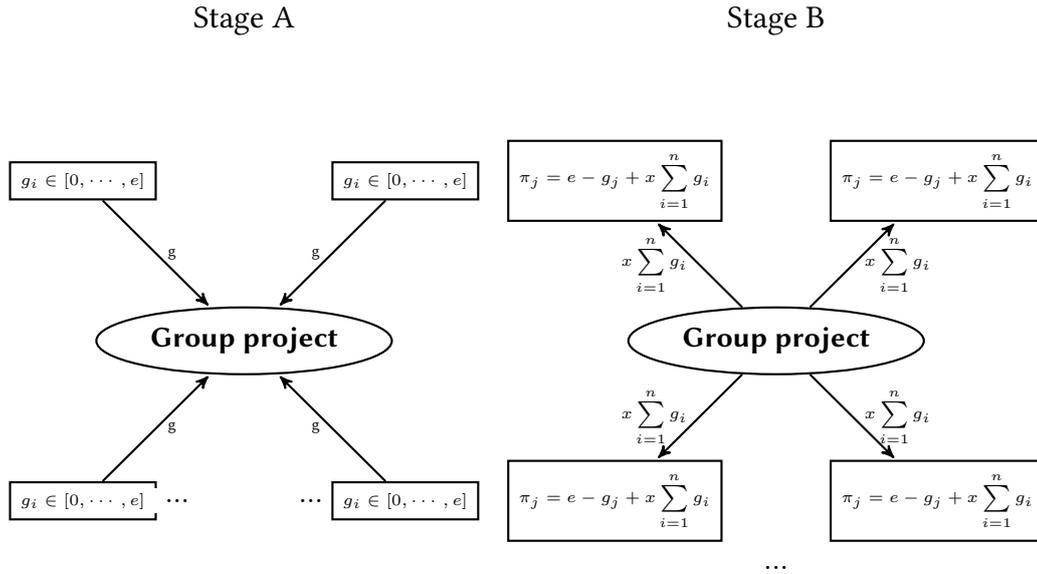
Figure 2: Graphical Representaiton of the Social Dilemma Game.

Here e is the initial endowment, g_i (for $i \in [1, .., N]$) is the amount that player i chooses to contribute in the group project at the stage A. It is restricted between zero and the initial resources. At the stage B, when all contributions are collected, profits(π_i) are calculated for each individual player. A fraction of joint contributions that returned to each player is noted as x. Fraction x satisfies the following restriction: $\frac{1}{n} < x < 1$, where n is the total number of contributors in the group project. With respect to these restrictions players maximize individual profit (π_i) by contributing zero and group profit by contributing the whole initial endowment e. Fischbacher et al.(2001)[7] used standard linear public goods game in their experimental setting, which was picked up from Ledyard (1995)) [14], only payoffs system was slightly modified. Fischbacher et al. [7] reported cooperation at 33.5 % level in the unconditional treatment, even though fair preferences such as altruism or inequality aversion are not the most common among economical assumptions about individuals. In the Social Dilemma Game (aka Public Goods Problem) players are asked to make the decision between investment in either an individual or a group profit. J.O. Ledyard (1995)[14] discussed two predictions for such a game and showed that neither of those two are completely right in the experiment. The first so called economic/game-theoretic prediction states that all participants should take a *free ride* and contribute zero to the group project. This prediction is based on assumption that players have (only) self regarding preferences and in such a way maximize their personal profit. According to the second sociological-psychological prediction, individuals should contribute their whole initial endowment, as it is group optimal. The empirical studies show that neither of these theories are completely right and subjects do not

care **only** about the individual or group optimal outcomes. The game theoretical prediction is based on selfishness of the individuals, whereas sociological-psychological is based on the other-regarding preferences. Despite the reasoning and the variation in experimental game settings, the contribution level tends to be positive, but rarely succeeds maximum level.

2.3   Lottery Game

Risk neutrality is another frequently used assumption about economic agents. It was shown by Holt and Laury(2002)[10] that this is not the case even in the small stake lotteries. They found evidence of risk awareness by running the low-payoff Lottery Game. Subjects in their treatment were asked to make decision between paired lotteries without losses A and B. Each lottery had two outcomes. Lottery A had the outcomes of $ 2 in the case of success and $1.6 otherwise. It was a safe lottery with lower winnings and smaller gap between desired and second best outcome, whereas payoffs of lottery B varied much wider from $3.85 (in case of success) to $0.1 (if player "loses"(doesn't win) the lottery).

Figure 3 represents the expected value for both lotteries in each situation and optimal strategies under the risk neutrality. Table on the left side of Figure 3 shows probabilities to win and to lose(loss means winning less) and expected values in each situation of both A and B lotteries. Moreover, differences of Expected Value (EV) are given in the last column. These differences can be seen in the middle graph. The EV difference goes below zero at the 5th situation, whereas it is positive in the previous situations. According to the theory, the risk neutral individual should play 4 safe lotteries at the begging and switch to lottery B in 5th situation. As it was mentioned before, this assumption has failed even in the small gambles. Not only two thirds of the subjects in the original experiment showed some kind of risk aversion, but the significant portion of participants (13.2%) deviated back and forth from lottery B to A.

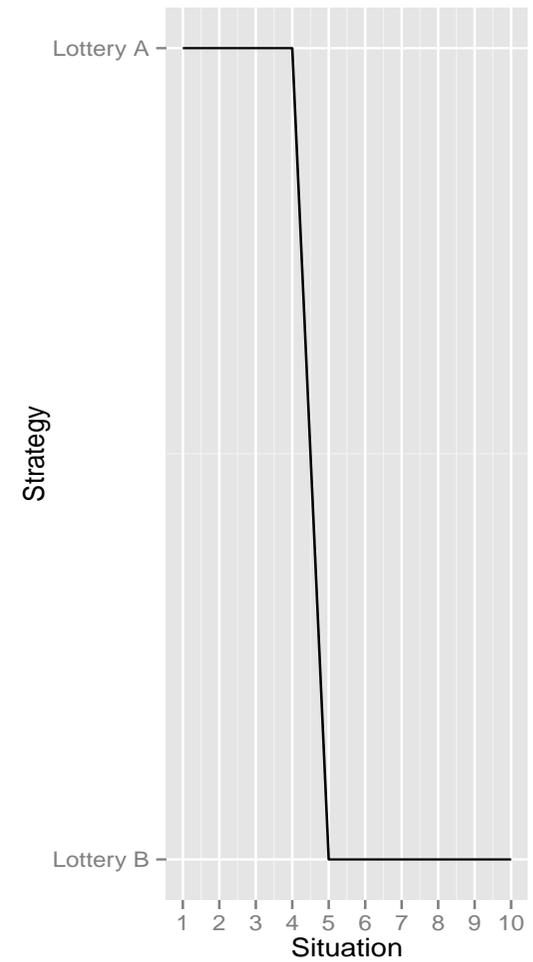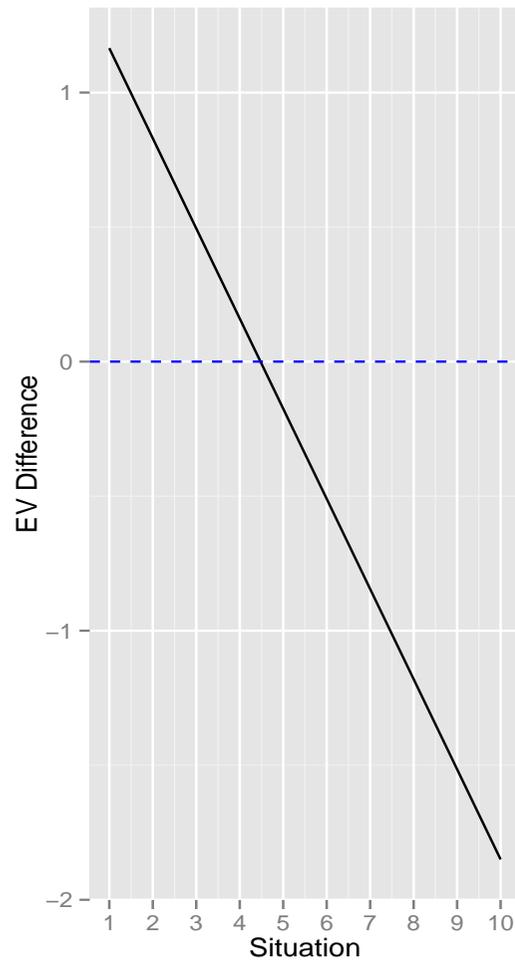| Probability | | EV_A | EV_B | EV diff. |
Win	Lose			
$\frac{1}{10}$	$\frac{9}{10}$	1.64	0.475	1.165
$\frac{2}{10}$	$\frac{8}{10}$	1.68	0.85	0.83
$\frac{3}{10}$	$\frac{7}{10}$	1.72	1.225	0.495
$\frac{4}{10}$	$\frac{6}{10}$	1.76	1.6	0.16
$\frac{5}{10}$	$\frac{5}{10}$	1.8	1.975	-0.175
$\frac{6}{10}$	$\frac{4}{10}$	1.84	2.35	-0.51
$\frac{7}{10}$	$\frac{3}{10}$	1.88	2.725	-0.845
$\frac{8}{10}$	$\frac{2}{10}$	1.92	3.1	-1.18
$\frac{9}{10}$	$\frac{1}{10}$	1.96	3.475	-1.515
$\frac{10}{10}$	$\frac{0}{10}$	2	3.85	-1.85

Figure 3: EV of the Lottery Game & Optimal Strategy Under Risk Neutrality

2.4 Cross-Cultural Experiments

According to the up to now presented discussion on trust, there is no methodology, that can measure trust without noise. Although evidences of trust importance in theoretical as well as empirical economics are presented, the impact of trust on trade, investment and FDI, intrigues to dig deeper for understatement of cross-cultural trust. Several cross-cultural studies on trust provide interesting findings of different trust levels among individuals from different cultures. Freshtman et al. [8] reported discrimination within Israeli society towards Eastern players in the Trust Game. They found that not only Ashkenazic players [1] transferred lower amounts to Eastern players, but Eastern players among themselves as well. Marc Willinger et al. [18] compared trust and reciprocity between Germany and France and reported the difference in the general trust levels between participants in Germany and France, but no difference in the reciprocity. Moreover, there was no statistical evidence found that senders either from Germany or from France sent less to the foreign receivers than they did to the local ones. Bornhorst et al (2010) [4] reported behavioral differences in the repeated Trust Game played among players divided into two groups North and South, depending of their country of origin.

Adler et al. [1] discussed difference in cross and inter cultural negotiations and expected that some people should behave in the same manners, no matter with whom they are negotiating and others should act according to that. They report a difference between cross- and inter- cultural negotiation outcomes, i.e. more cooperative strategies were used by the francophone Canadians in cross cultural setting (negotiation with anglophone Canadians), Japanese paired with Americans shared lower individual and joint profits compared to the situations where Japanese negotiated with their countrymen.

L. Guiso et al.(2009) [9] modelled the mutual-trust and argued that mutual trust depends on cultural differences. In the biggest model, the following exogenous variables were found to be significant: fraction of years at war (1000−1970), religious similarity, somatic distance, differences in GDP per capita (percentage), Press coverage [2]. Significance of religion similarities was also reported by D.S. Karlan [12].

Taking these findings into account, it is more than intriguing to look at the cross-cultural trust among the Baltic States. All three states have very different distribution of religious beliefs. Estonia is famous as one of the most non-religious countries in the world(54% of population), 77%

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[1] central or eastern European descent players

[2] There were plenty of insignificant variables in this model, which lead to inefficient estimation, insignificance of other used exogenous variables should be additionally tested

of Lithuanian population are reported as Roman Catholics, and in Latvia no dominant religious (dis)belief exists and there are three biggest religious groups with significant share in population: Lutherans(30%), Roman Catholics and Orthodox and Old Believers, both around (20%).

Even if this region is sometimes seen as a very homogeneous one, there are obvious religious, linguistic and cultural differences that might affect the cross cultural trust. Even trust index, measured by WVS, significantly varies in three countries. According to data of 1999, trust index in Lithuania was the highest, standing at 52.8, 48.4 in Estonia and only 35.9 in Latvia. Data collected during the actual experiment discussed in following sections provides some valuable insides regarding these questions.

3 The Experiment

3.1 Predictions

In Section 1, the hypothesis that cultural differences might cause different trust levels among the Baltic states was raised already. In this short subsection, this hypothesis is combined with the findings reported in Section 2 and discussed in more detail. Arrow's (1972) [2] introduction quote was used to show trust importance in economics. The discussion and findings in paper by Marc Willinger et al. [18] on Fukuyama conjecture argues that the trust fuels economic performance, also the effect of "fundamental differences in cultural, institutional and religious heritage" on trust is mentioned. In the sense of the highest GDP per capita Estonia is the most economically advanced country among the Baltic States and is the only Baltic country belonging to the OECD. According to findings in Knack and Keefer [13] "trust and civic norms are stronger in nations with higher and more equal income". Thus, the higher economical development can result in participants from Estonia being the most trustful.

What is more, obvious religious differences in the Baltic States exist. These can result in different trust levels. The domination of Catholicism in Lithuania can result in lower trust level than in the other two countries, as it is argued in the literature. Also, the findings by D.S. Karlan [12] have shown higher trust level between players of the Trust Game with the same religion beliefs. Latvia, being a fairly heterogeneous country in religion, can lead to the less trusting society and lower trust than in the other two more homogeneous Baltic States.

The design of the experiment allows to test the discrimination in trust. Lithuanian and Latvian

languages being from the same Baltic language group can lead to both countries favoring each other over Estonia. On the other hand, Latvia is the only country that has land-border with both countries and Estonia being the exemplary neighbor can favor them over Lithuanian counterparts. Estonia has only land border with Latvia and there are some running jokes about its south neighbors [3], that can also lead to favoring Lithuanians over Latvians.

3.2 Design

In this subsection, the actual scientific experiment is reviewed in more detail. The experiment took place in the three Baltic States (Estonia, Latvia, Lithuania) on the 24th of March, 2015. The experiment consisted of a survey and three games that were played among participants. The survey and games were available to participants in their native languages (Estonian, Latvian, Lithuanian), as well as English and Russian. The total number of participants in each country was 30, so in total 90 participants (3x30) over three countries. Participants were gathered at the buildings of the universities in three cities: Tartu (Estonia), Riga (Latvia) and Vilnius (Lithuania). Participants were asked to take some of their time and participate in this experiment. When three participant were found (one in each country), each member of this triplet was provided with a tablet and started the experiment by filling out the survey and continued on to the Social Dilemma game, Lottery Game and, at the very end, the Trust Game. At most, three grouped triplets simultaneously took part in this experiment. Players were paid their monetary earnings immediately after they finished the survey and all three mentioned games.

All three games played among participants included some monetary payoffs that depended on their decisions, the decisions of their counterparts, as well as their luck in the Lottery Game. The games were slightly modified from the originally disused ones to make them more suitable for this particular experiment.

Social Dilemma Game was introduced to the participants as follows: *"You have 125 coins, you can put any amount of your 125 coins in the joint pot. All the money in the pot will be doubled up and equally spread among you and other 2 players from other Baltic States who can also put any amount of their 125 coins in this pot. All kept and received coins will be instantly transferred to your account, at the end of the survey exchanged to real money and handed to you.".* As it was discussed in Subsection 2.2, players had to make the decision about the amount they want to invest in the joint pot: zero investment leads to the maximized individual profit, investment of

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[3]Some Estonians say that Latvians have six toes. Also, some feel that Latvians try to copy Estonians in a negative way like the youngest child his/her older siblings.

whole endowment (125 coins) - to maximized joint profit. Each invested coin provides $\frac{2}{3}$ of the coin in return for individual player, but doubles up the joint group profit.

The second game played by the players was the Lottery Game. The same payoff structure was used as in the original low-payoff game introduced by by Holt and Laury(2002)[10]. Players were informed about this game in the following form: *"There are 10 hats, with 10 balls in each of them. You can choose between two lotteries with different winnings (A or B). Only the numbers of blue and red balls are different in each hat. At the end of this survey, one out of ten hats will be randomly selected and your chosen lottery (A or B) for that particular hat will be played. The amount you win will be exchanged to real money and handed to you after you finish this survey.*

A: if a blue ball is drawn, you win 200, if a red one 160 coins

B: if a blue ball is drawn, you win 385, if a red one 10 coins ".

Participants faced 10 decisions on the screen, in the first hat there was one blue and 9 red balls, in the second hat 2 blue and 8 red, and so on, until the 10th hat in which there were 10 blue and 0 red balls. The main difference between original experiment and the one implemented in the Baltic States is that originally probabilities were explained in terms of a ten sided-die. How so ever, it does not change the optimal strategy under the risk neutrality. The risk neutral players should play four times A at the beginning and switch to B afterwards.

The final game played by the participant was the Trust Game. The rules of this game were provided to the players as follows: *"Sender-Receiver interaction.*

A sender will send the coins to a receiver from a foreign Baltic country, the sent amount will then be multiplied by 3, and the receiver will then decide how many coins to send back. At first, You will be asked to be a sender and send some coins (from 0 to 125) twice - once to each foreign Baltic Country (Latvia and Lithuania). You will also be a receiver and receive coins from both of the foreign Countries, three times as many as (or if) senders from those countries will decide to send. Receivers from foreign countries will be randomly selected and will only know your age and where you are from. The same information will be available to you. Transactions are proceeded simultaneously. Only the sent coins will be multiplied by 3, but not the returned. For each coin sent, the receiver will receive triple as many coins as you have sent. For example, if you send 0 coins, receiver receives 0 coins, if you decide to send 1 coin, receiver receives 3 coins, if 2, received amount is 6 and so on. Your total earnings will be accumulated from your kept and returned coins. At the end of the survey, all collected coins will be exchanged to real money.".

The main difference between such Trust Game and the original one is that Player A has to make two decisions at the same time: how many coins to send to two different receivers, about whom

the player knows only the age and the country of origin. Second difference is that players are asked to play both the sender's and receiver's roles. It is reasonable to believe that there is an element of trust in the sender's behavior: player expects some of the sent money back. Sender should trust the receivers that they will return profitable amount of money in the next round. Also, there is an element of reciprocity in the receiver's behavior: any positive returned amount negatively affects player's individual profit. It is also important to notice that receiver has to make two decisions: how many coins to return to each sender from previous round simultaneously (if both of them transferred positive amount of coins), moreover, receiver has information on how many coins have been transferred by both players.

This experiment took up to 10 minutes for one player to complete it, participants earned from €3.94 to €17.59, average earnings were equal to €9.83.

3.3 Software

Some summary statistics, as well as some more advanced stats that lead to deeper insides, can be found in the following (sub)sections, but first of all, few words have to be said about the technical part of the experiment - the software. In this experiment players were at least 222 km away from each other. The Trust Game experiment was originally run with double blind procedure and passing the envelopes from participants to staff members, who brought the envelopes to another player. It was impossible to run this cross-cultural experiment in the original manner, due to the already mentioned distance. The solution to this problem was to use internet and to develop the software. It was used to play the games and control players interactions in real time. For these purposes, programming language **R** was used, and its library *"shiny"*. The developed *"shiny"* application was uploaded on shiny server, which was implemented on Amazon Web Service platform. The survey application was available to reach from any web browsers in all three participant countries. The screen shots of this application can be found in the Appendix section 5. They are provided for a better understanding of the user interface and the participants' experience during the experiment.

This software allowed participants to play games in a very short time frame, players didn't have to interact with the supporting staff of the experiment while passing the actual money and playing games. Moreover, players got their monetary payoffs directly after they finished the experiment. So, there was no depreciation of money future values in this experimental setting. Thanks to this software, these presumable noises were avoided in such setting.

3.4 Survey results

Participants' answers to the questionnaire, which can be found in the table 3 below, are summarized in this subsection. The answers to these question were used to gather micro data about participants and to explain participants behavior in the Trust game.

The answers to survey questions are summarized in the tables below and provided by country.

- The table below shows average age among participants in all three countries, as well the number of "outliers"(people older than 35+).

	Estonia	Latvia	Lithuania
Avg age	21.32	21.43	21.76
Standard deviation (σ)	2.04	1.89	2.32
# of participants $\leq$35+	2.00	0.00	1.00

Table 1: Age of Participants in The Experiment

The average age in three countries varies from 21.32 in Estonia to 21.76 in Lithuania with relatively small standard deviations(1.89 - 2.32)

- Religion beliefs:

  Both tables below represent distribution of religion beliefs by country in the numeric and percentage forms. It is worth mentioning that 10 Latvians(33%) identified their religion beliefs as "other". One of the possible reasons is that they do not want to talk about religion and assign themselves to one or another main religion group. Such results are sustainable with the data provided by ***IndexMundi*** [19]. Other sample stats are among the lines of official statistics: non believers dominate in Estonia and Christians in Lithuania.

	Roman Catholic	Lutheranism	Orthodox or Old Believer	Non religious	Other
Estonia	0 (0 %)	2 (6.67 %)	0 (0 %)	27 (90 %)	1 (3.33 %)
Latvia	6 (20 %)	10 (33.33 %)	0 (0 %)	4 (13.33 %)	10 (33.33 %)
Lithuania	23 (76.67 %)	0 (0 %)	1 (3.33 %)	2 (6.67 %)	4 (13.33 %)

Table 2: Religion Beliefs of the Participants by Country.

Nr.	Question	Answer 1	Answer 2	Answer 3	Answer 4	Answer 5
1	How old are you?	16	17	..	34	35+
2	What are your religious beliefs?	Roman Catholic	Lutheranism	Orthodox or Old Believer	Non religious	Other
3	Are you Male or Female?	Male	Female			
4	Suppose you are in foreign country and you are introduced to others as a person from Baltic States. Would you prefer more to be introduced as a person from your own country or you do not mind that at all?	Prefer to be introduced as a person from my own country	I do not mind to be introduced as a person from Baltic States			
5	Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?	Most people can be trusted.	Need to be very careful.			
6	Now I would like to ask you how much trust you have in people from Estonia/Latvia?	a lot of trust	some trust	not very much trust	no trust at all	
7	Now I would like to ask you how much trust you have in people from Latvia/Lithuania?	a lot of trust	some trust	not very much trust	no trust at all	
8	About which country do you follow (have followed) news on any type of media (TV, newspapers, internet)?	Estonia/Latvia	Latvia/Lithuania	Both	None	
9	Which of the below listed countries have you visited?	Estonia/Latvia	Latvia/Lithuania	Both	None	
10	From which below listed country do you have friends?	Estonia/Latvia	Latvia/Lithuania	Both	None	

Table 3: Questionnaire of the Experiment.

- Gender representation among the participants is shown in the table below. While Estonian sample is slightly male dominated and Latvian - Female, both genders are almost equally represented in Lithuania. The Estonian males outbalance Latvian females and in total 90 participants pool both genders are well represented.

Estonia	19 (63.33 %)	11 (36.67 %)
Latvia	11 (36.67 %)	19 (63.33 %)
Lithuania	14 (46.67 %)	16 (53.33 %)

Table 4: Genders Representation in Sample by Country.

- "Unification" question: whether participant prefers to be introduced as a person from the native country or does not mind to be introduced as a person from the region (the Baltic States).

  Participants were asked how they would feel if they were in a foreign country and were introduced to others as people from the Baltic States. Do they prefer to be introduced as people from their own country, or they do not mind that so much. The results shows that in this sample, about $\frac{2}{3}$ of Estonians and Latvians prefer to be introduced from their own country and this number climbs even higher in the Lithuanian sample reaching 87 %. It does not necessary indicate participants' bad feelings about the region and their unwillingness to be associated with the region, but more likely shows feelings about their own native countries. Following questions on trust and friendships show close connections in the region.

	Prefer to be introduced as person from my own country	I do not mind to be introduced as a person from Baltic States
Estonia	19 (63.33 %)	11 (36.67 %)
Latvia	20 (66.67 %)	10 (33.33 %)
Lithuania	26 (86.67 %)	4 (13.33 %)

Table 5: Answers to the Introduction Question by Country.

- Question of WVS about the trust was also included in this survey: Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?". The results are consistent with the **World Map of Interpersonal Trust**[20]. Even though this map is a bit outdated, it shows the tendencies that in the Baltic Region, Latvians seem to be the most careful while dealing with people, while Estonians and Lithuanians are more trusting. If one assumes that these small samples represent tendencies in all three countries, then all three countries have moved since the Trust Map was drawn to the direction of trust and got closer to their Nordic neighbors over Baltic sea - the Scandinavians, who are among the most trusting people, according to the Trust Map.

	Most people can be trusted	Need to be very careful
Estonia	22 (73.33 %)	8 (26.67 %)
Latvia	9 (30 %)	21 (70 %)
Lithuania	16 (53.33 %)	14 (46.67 %)

Table 6: Trust in Random Individual by Country (Trust Questions of WVS).

- The following Tables7, 8 and 9 represent Trustworthiness of a particular Baltic Country in the perspective of other two. The participants where asked to describe their trust in another country: the scale starts with "a lot of trust" and ends with "no trust at all. According to the answers, Estonians trust the most compared to others. It does not matter whether it is Latvia or Lithuania, Estonians trust them more than another foreign country respectively. Estonia itself is slightly more trusted by Lithuanians than Latvians.

It is worth mentioning that there was only one person, who didn't have any trust in another Baltic country at all and that was a person from Latvia who didn't trust Lithuanians. All other people trusted other countries and replied to the question on their trust level with a lot or some trust, which is the second highest level of the trust in this scale.

	a lot of trust	some trust	not very much trust	no trust at all
Latvia	2 (6.67 %)	25 (83.33 %)	3 (10 %)	0 (0 %)
Lithuania	10 (33.33 %)	17 (56.67 %)	3 (10 %)	0 (0 %)

Table 7: Trust in Estonians by the Other Two Baltic States.

	a lot of trust	some trust	not very much trust	no trust at all
Estonia	11 (36.67 %)	18 (60 %)	1 (3.33 %)	0 (0 %)
Lithuania	5 (16.67 %)	22 (73.33 %)	3 (10 %)	0 (0 %)

Table 8: Trust in Latvians by the Other Two Baltic States.

	a lot of trust	some trust	not very much trust	no trust at all
Estonia	10 (33.33 %)	19 (63.33 %)	1 (3.33 %)	0 (0 %)
Latvia	2 (6.67 %)	20 (66.67 %)	7 (23.33 %)	1 (3.33 %)

Table 9: Trust in Lithuanians by the Other Two Baltic States.

- The following Table 10 represents the interest in news about foreign Baltic States. Participants where asked if they follow / have followed news about other countries in the region. Estonians showed to be the least interested in news about both foreign countries, and Latvians were the most interested ones. The numbers of people who were not following the news about any foreign country is 23, 8, 14, in Estonia, Latvia and Lithuania respectively. It is 50% of total sample.

	North[4]	South[4]	Both	None
Estonia	1 (3.33 %)	0 (0 %)	6 (20 %)	23 (76.67 %)
Latvia	4 (13.33 %)	1 (3.33 %)	17 (56.67 %)	8 (26.67 %)
Lithuania	1 (3.33 %)	2 (6.67 %)	13 (43.33 %)	14 (46.67 %)

Table 10: Interest in News About the Foreign Baltic States

- The next question was about visits to a foreign Baltic State. Only 9 people haven't been in another Baltic country, this is only 10% of the total sample. The most of the participants have visited both foreign countries. Lithuania is the most visited country, with 51 visits of the total 60 available, Latvia has 50, Estonia 48 visits. Latvia has a land border with both Baltic states and is located between Estonia in the North and Lithuania in the south. Also, Lithuania has to be visited while traveling form any other two Baltic States to the continental Europe.

	North[4]	South[4]	Both	None
Estonia	5 (16.67 %)	0 (0 %)	23 (76.67 %)	2 (6.67 %)
Latvia	2 (6.67 %)	1 (3.33 %)	27 (90 %)	0 (0 %)
Lithuania	1 (3.33 %)	4 (13.33 %)	18 (60 %)	7 (23.33 %)

Table 11: Visits to a Foreign Baltic State.

- 37 participants in Latvia and Lithuania reported that they have friends at least in one foreign Baltic state. It is 62 % of total 60 participants pool in both countries.

	North[4]	South[4]	Both	None
Estonia	-	-	-	-
Latvia	4 (13.33 %)	4 (13.33 %)	9 (30 %)	13 (43.33 %)
Lithuania	3 (10 %)	9 (30 %)	8 (26.67 %)	10 (33.33 %)

Table 12: Friends from a foreign Baltic State.

3.5 Differences in Trust Measured by Questionnaire

Answers to the questionnaire are used in this research to explain the sender's/receiver's behavior in the Trust Game, but this subsection is dedicated to non-parametric tests that were applied to compare answers of trust questions[5] in the survey.

The answers to World Value Survey question in each country were decoded into a {0,1} sample: one if participant answered, that most people can be trusted and zero otherwise. The Z test was applied pairwise to the data of all three countries, and significant differences in means were found. H_0's of equal means were rejected at 1% significance level while comparing Estonian and Latvian samples, also at 6% Estonian and Lithuanian, and at 4% Latvian and Lithuanian. Thus, statistical evidences were found that trust level to a random individual measured by WVS question differs in all three Baltic states at higher or lower significance levels. These findings supports hypothesis that individuals from all three Baltic states should behave differently in the Trust game.

Moreover, the answers to the questions number 7 and 8 in table a 3 about trust in people from foreign countries were used to identify, differences in cross cultural trust, i.e. if one foreign country is more trusted by any of other two, and if one country trusted one foreign country more than

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[4] North is Northern Foreign Country, South - Southern
[5] questions number:6,7,8

another. The categorical answers about trust in people from other countries were decoded into numeric form (4 was assigned if person chose answer "a lot of trust", 3 if "some trust" was chosen as an answer, etc.).

Wilcoxon rank sum test was applied if countries tend to trust other two Baltic countries differently. According to this test to paired data the H_0, that the answers to both trust questions were drawn from the same distribution, was not rejected for the Estonian sample, but was rejected for Latvian and Lithuanian at 9% and 10% level. Then the following transformation was applied to this data and data was decoded to: $(1,0)$, if participant trusted more the Northern foreign Baltic country, $(0,1)$ if Southern and to $(0,0)$ if both countries were trusted the same according to both answers on the subject. After these data transformations, Z-test was applied to test stochastic inequality with: $H_0 : \delta \leq 0$ where $: \delta = Pr(Y_2 > Y_1) - Pr(Y_1 > Y_2)$. H_0 was rejected for Latvian sample at 5% significance level, comparing trust in Estonians(Y_2) and Lithuanians(Y_1). Also H_0 was rejected for Lithuanian trust at 6% level, taking Y_2 as Lithuanians trust in Estonians, and Y_1 as trust in Latvians. According to these results, there is a tendency that Estonians are trusted more by Latvians and Lithuanians than another foreign Baltic State respectively, and Estonians tend to trust both foreign Baltic states the same.

The Mann Whitney Wilcoxon test was applied to test the identity of trust distributions in countries by the other two Baltic states, i.e. if there were differences in how countries were trusted by participants from both foreign states accordingly. H_0 that data for trust in Latvians was drawn from the same distribution to Estonian and Lithuanian samples was rejected. Also, differences of how Estonians are trusted by Latvians and Lithuanians were found at 5% , the distributions of trust in Lithuanians differ between Estonians and Latvians at 1% level.

The testing for stochastic inequality for two independent samples with more than 2 outcomes followed the methods presented in Schlag(2008) [17]. $H_0 : \delta \leq 0$ where $: \delta = Pr(Y_2 > Y_1) - Pr(Y_1 > Y_2)$ was rejected at 10% level and evidence was found that Estonian trust (Y_2) tends to generate larger outcomes than Lithuanian Y_1, here Y_1 and Y_2 is trust in Latvians. Moreover, Estonian trust (Y_2) tends to generate larger outcomes than Latvians Y_1 (at 5% level), here Y's are trust in Lithuanians. Also, at 10 % level was found that Lithuanians tend to trust Estonians more than Latvians, according to the answers to trust questions.

To sum up, the strong or weak differences in the trust patterns among the Baltic States were reported. This is an early indication of possible difference in participants behavior while playing games. The outcomes of games are discussed in following subsection.

3.6 Games

3.6.1 Social dilemma game

Participant were asked to play previously introduced Social dilemma game. As it was discussed, any transferred amount greater than zero turns into immediate loss, but also into joint profit. Players make the decision based on their personal preferences, how many coins of their total 125 to contribute to the joint pot.

The smallest amount that was contributed was 7 coins by Lithuanian, whereas the smallest amount transferred by Estonian was 50 coins and the smallest amount given away by Latvian was 35 coins. On average Estonians, Latvians and Lithuanians transferred 93.33(74.66%), 85.17(68.14%) and 74.93 (59.84%) coins (percentage of initial endowment), respectively.

	Mean	Min	Max	Median
Estonia	93.33	50.00	125.00	100.00
Latvia	85.17	25.00	125.00	78.50
Lithuania	74.93	7.00	125.00	75.00

Table 13: Results of Social Dilemma Game: Contributions in Numeric Form.

	Mean	Min	Max	Median
Estonia	74.66 %	40 %	100 %	80 %
Latvia	68.14 %	20 %	100 %	62.8 %
Lithuania	59.94 %	5.6 %	100 %	60 %

Table 14: Results of Social Game: Contributions in % of Total Endowment.

Wilcoxon rank sum test was performed to test the identity of distributions. H_0 of distributions identity was rejected at 7% significance level for Estonian and Lithuanian samples, but there was no significance evidence to reject H_0 neither of Estonian-Latvian nor Latvian-Lithuanians pairs even at 10% significance level, the transitivity does not hold in this case, but one has to remember that the original data varies from 0 to 125 and there are only 30 observations in each country. To get more powerful results, the data was decoded to $\{0, 1\}$ sample. 1 was assigned if participant contributed $\frac{1}{3}$ or more of the initial endowment to the joint pot, and 0 otherwise. This contribution can be seen as a "fair" contribution since in such a case participant keeps $\frac{2}{3}$ of the endowment to himself/herself and since contributed money are doubled up in the joint pot, the initial contribution of $\frac{1}{3}$ becomes $\frac{2}{3}$ in the final joint pot. The Z-test has shown differences between Estonians and Latvians, and Estonians and Lithuanians, but there were no evidences

found to reject H_0 for the Latvian and Lithuanian pair. The amount, no smaller than $\frac{1}{3}$ of the initial endowment, tended to be contributed more often by Estonians than Latvians or Lithuanians.

3.6.2   Lottery Game

Table 15 below represents the total share of participants who played this Lottery game with one deviation point, which means that these players deviated once from lottery A to B and never switched back. Also, the share of participants who got completely lost in this game and for one reason or another decided to play safe lottery with lower payoffs even with zero probability to lose at the 10th situation. For example there was a participant who chose B lotteries at first 4 situations and switched to A in all following situations. All other participants switched back and forth from one lottery to another more than one time, but at least chose higher winnings over smaller in the last situation.

	one break point	Safe lottery w/ no prob. to lose
Percentage	48.89 %	25.56 %

Table 15: Understandment of the Lottery Game in % form.

The Table 16 below provides results, with distribution of strategies among those participants who made only one deviation. The magic number of safe lotteries in this experimental setting was 4, as it was mentioned before. The risk neutral individuals should play 4 safe lotteries and then deviate to risky lottery. As it can be seen in the table 16, it is not the case and 72.7% of participants with one deviation point have shown higher or lower level of risk awareness even in such a small gamble. Only 13.64% of participants have played this game optimally under risk neutrality and deviated to risky lottery after 4 safe choices. There were slightly below 14% of participants, who have played this game *"risk seeking* at higher(0 safe choices) or lower(3 safe choices) level. These results are consistent with the findings in original literature, where this experiment was used.

Number of safe Lotteries:	0	1	2	3	4	5	6	7	8	9
share:	6.82 %	2.27 %	0%	4.55 %	13.64 %	18.18 %	31.82 %	18.18 %	2.27 %	2.27 %

Table 16: Strategy Distribution in the Lottery Game among the Participants with One Breakpoint.

Figure 4 below represents the difference between theoretically under risk neutrality assumed

strategies and the empirical outcome observed during this experiment. The left graph represent the theoretical(blue line) and empirical(red line) Cumulative Distribution Functions (CDF). The graph in the middle shows the theoretical(blue line) and average empirical strategies. The difference between expected values of these two strategies is drawn in the very right graph. The difference of expected values grows from risk neutral strategy (4 safe choices) until the seventh situation, due to increasing differences in expected values as well as due to not fast enough convergence of empirical average strategy to optimal strategy.
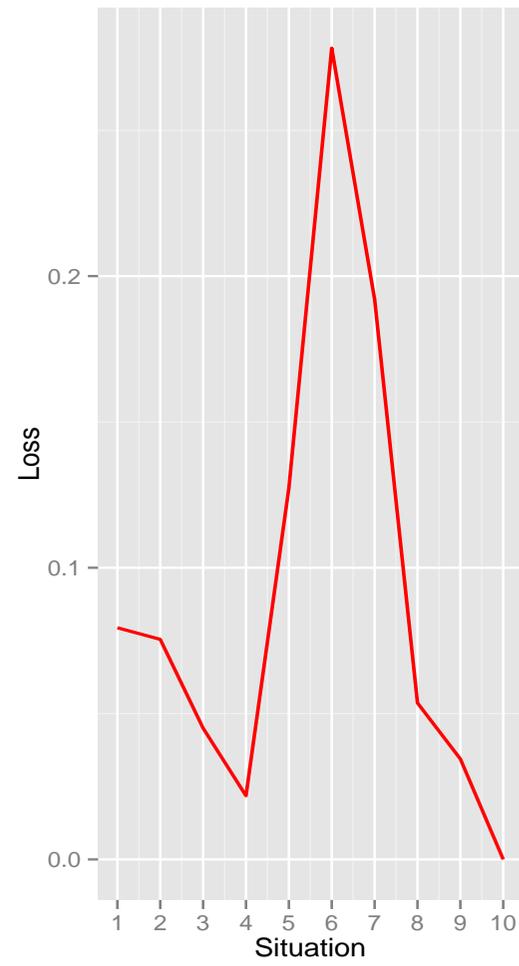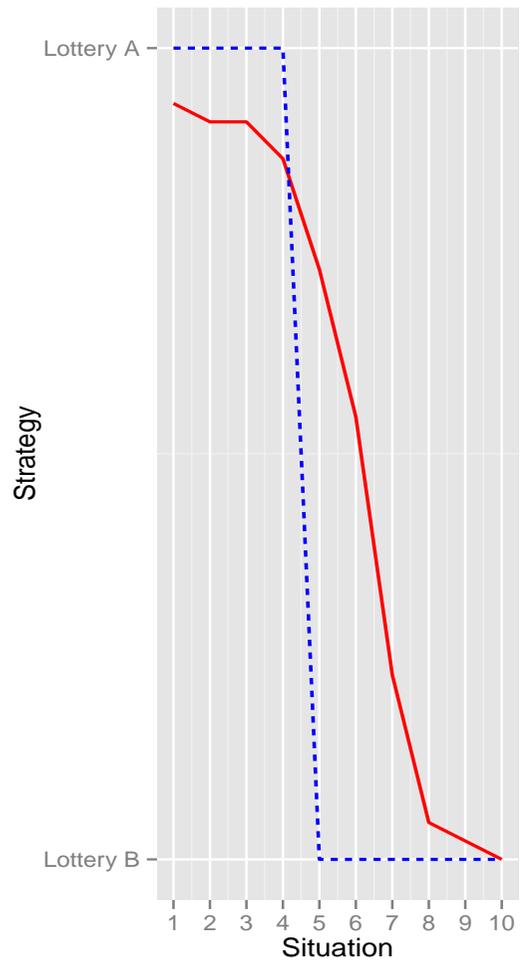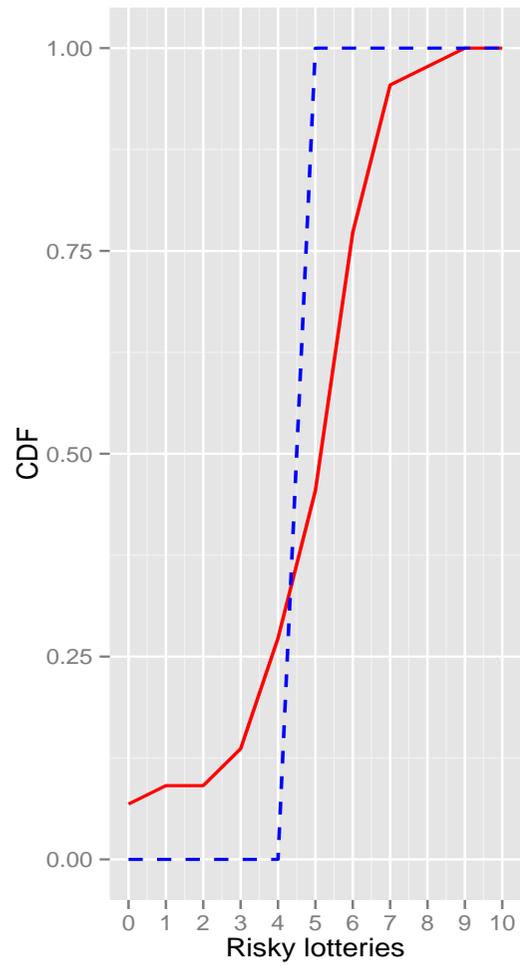
Figure 4: Lottery game empirical results

It is seen from CDF graph on the left side of the Figure 4 that a bit more than 77% of the players have played 6 or less safe lotteries, whereas 5 or less only 45%. As it was mentioned before, only 13.64% played the game as the theoretical risk neutrality assumption expects. The rest of the population made inefficient decisions either due to risky preferences or due to risk awareness, which led to the loss in the expected value.

3.6.3 Trust Game

As it was discussed before, the senders had to make two decisions simultaneously: how many coins to transfer to each person from both foreign countries. When all transfers were completed, player played receivers' role, and were asked to choose how much they want to transfer back to both players between zero and tripled amount they received.

3.6.4 Senders strategies

To avoid any bias, the participants were asked to make decision about the amount they want to send to each country simultaneously. Three tables below show choices of senders from all three Baltic States, and if any of the foreign countries was discriminated. In the tables below, information about the number of participants from each country, who discriminated one country in favor of another (they sent larger amount of coins to one country than to another) is provided. Four Estonians discriminated in favor of Lithuanians, but it is only 13.3 % of the Estonian sample. Latvia is the only Baltic state that has land boarder with both foreign Baltic States, and participants choices in trust game where very intriguing, 33.33% of Latvians transferred more to Estonians than to Lithuanians, and 16.6% vice versa. 26.6 % of Lithuanians on their own have shown discrimination in favor of Latvians, and 13.3% in favor of Estonians.

Putting the discrimination question aside, there are other interesting statistics in the tables below. It's worth mentioning that Estonians were the most generous senders and sent on average the largest amounts of coins and Latvians were those who played this game closest to the theoretical solution of this game. Just to remind, it states that senders should transfer zero coins, because following the backwards induction concept, receivers should always return zero coins and any transaction above zero leads to the automatic loss. That is not the case in a real life and it can be seen in another section where receivers actions are discussed.

| Avg Transfer | Transfer to LV[6] | | Transfer to LT[6] | | Disc in favor of | |
	min/max	Avg	min/max	Avg	LV	LT
90.7 (0.73)	10 / 125 (0.08/1)	89.3 (0.71)	10/125 (0.08/1)	92.1 (0.74)	0%	13.33%

Table 17: Summary Statistics of Estonian Senders' Choices

| Avg Transfer | Transfer to EE [6] | | Transfer to LT[6] | | Disc in favor of | |
	min/max	Avg	min/max	Avg	EE	LT
73.73 (0.59)	30 / 125 (0.24/1)	76.4 (0.61)	0/125 (0/1)	71.07 (0.57)	33.33%	16.67%

Table 18: Summary Statistics of Latvian Senders' Choices

| Avg Transfer | Transfer to EE[6] | | Transfer to LV[6] | | Disc in favor of | |
	min/max	Avg	min/max	Avg	EE	LV
80.7 (0.65)	0/125 (0/1)	79.77 (0.64)	19 / 125 (0.15/1)	81.63 (0.65)	13.33 %	26.67 %

Table 19: Summary Statistics of Lithuanian Senders' Choices

3.6.5 Receivers strategies

In this experimental setting receivers had to make two decisions at the same time: they received coins from two foreign senders simultaneously and then had to choose how many(if any) of the received coins multiplied by three to return to each of them.

Receivers problem in the Trust Game is the one, that has, probably, the most intuitive theoretical solution. More money is better: you get the money, you keep it. But surprisingly (or not), the reality differs and on average, senders made a profitable transaction, since the lowest **average** fraction returned to senders was 0.42, which was returned from Estonians to Latvians and the same fraction was returned by Latvians to Estonians. Only from 24.4% to 34.8% of transactions were unsuccessful to senders, since there was less returned to them than they had sent. Lithuanians were most generous in the receivers role, since transfer to Lithuania led to least unprofitable transactions from senders' perspective and Lithuanians returned highest fractions of received money to both countries.

Third column in the tables below is called "Returned higher fraction to" shows how many receivers returned higher fraction of received coins to one or another country. It is reasonable to look at returned fractions since the total numbers of coins returned do not tell the whole story. The absolute size of returned coins doesn't mean that much, one needs to know how many coins was transferred and how many was returned in relative terms. Receivers actions are bound from above by the tripled sent amount.

It is shown in these tables that 40% of Latvians returned higher fraction to Estonians and 43% to Lithuanians. Estonians and Lithuanians acted a bit differently, since more than 40% of Estonians and Lithuanians returned larger fraction to each other and only about 24% of participants in both countries returned higher fraction of received coins to Latvians. For some reason, Estonians and Lithuanians were more generous on average to each other in relative terms in the second round of the Trust Game.

The last column called "If more coins sent returned higher" represents how participants rewarded the receiver who transferred more money than the other foreign sender. It is seen that 86%, 85% and 75% of participants in each country returned larger amount of coins to the one who sent them more. Larger amount sent led to larger returned amount, but if one looks into the fractions the percentage is not as high. 43, 19, and 36 % of participants in Estonia, Latvia and

Lithuania respectively rewarded senders, who transferred more, with higher returned fractions.

Returned less than was sent to		Average fraction returned to		Returned higher fraction to		If more coins sent returned higher	
LV	LT	LV	LT	LV	LT	amount	fraction
31.03%	34.48%	0.42	0.46	0.24	0.45	0.86	0.43

Table 20: Summary Statistics of Estonian Receivers' Choices

Returned less than was sent to		Average fraction returned to		Returned higher fraction to		If more coins sent returned higher	
EE	LT	EE	LT	EE	LT	amount	fraction
26.67%	30%	0.42	0.43	0.4	0.43	0.85	0.19

Table 21: Summary Statistics of Latvian Receivers' Choices

Returned less than was sent to		Average fraction returned to		Returned higher fraction to		If more coins sent returned higher	
EE	LV	EE	LV	EE	LV	amount	fraction
24.14%	31.03%	0.48	0.47	0.41	0.24	0.75	0.36

Table 22: Summary Statistics of Lithuanian Receivers' Choices

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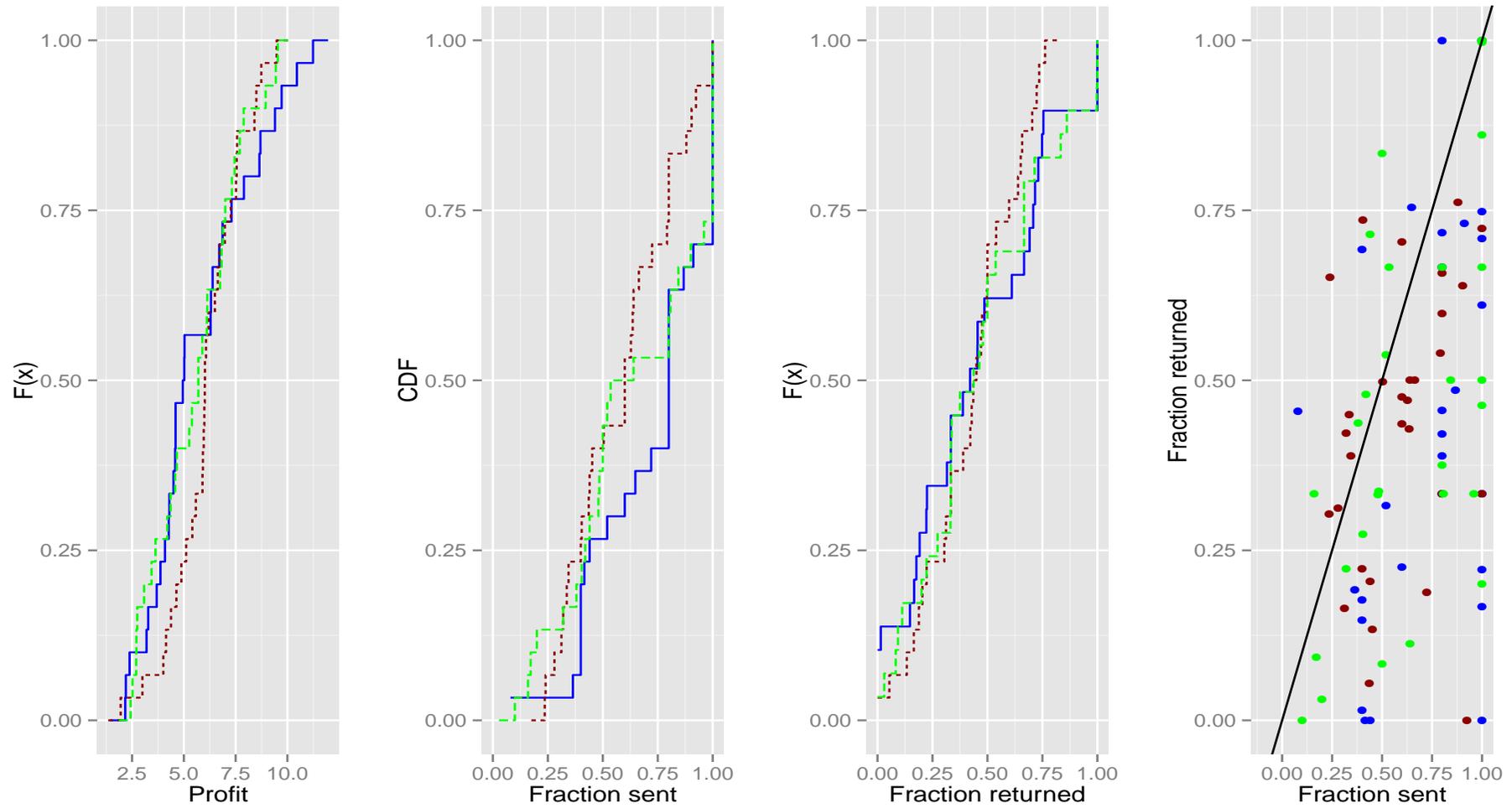[6]Results in breakets represent ratio between transfered amount and endowment

Figure 5: Trust Game game empirical results

3.6.6 Testing for Differences in Sent and Returned Ratios

Figure 5 shows empirical results of Trust Game and distribution of strategies among participants from all three Baltic states. Estonia is represented by the blue color, Latvia - by dark red - and Lithuania - by green. The figure on the left represents the CDF functions of profits that participants made playing the Trust game. The second figure from left to right represents CDF of the average fraction sent by country. The average fraction was calculated as the arithmetic means of the fractions sent to both foreign countries. The third graph shows the CDF of the returned average fraction by country, it was calculated as arithmetic means of the fractions returned to both foreign countries. The participants who received zero coins from at least one country were excluded from this graphical representation of receiver strategies. The figure on the right side represents combined participants' strategies, each data point is participants average fraction sent on x axis and average fraction returned on y axis, the black line in this figure is a $45°$ slope. The majority of data points lie below that $45°$ line. It indicates that participants chose to return smaller fraction than they initially sent as Players A in the first round.

Running Mann Whitney Wilcoxon test didn't indicate any differences in distributions of reciprocity among all three Baltic states. Interestingly enough, the differences of reciprocity were not observed in other examples of cross-cultural Trust-Game experiments as well, e.g. neither in the repeated Trust Game experiment between North and South by Bornhorst et al. [4] nor one-shot Trust-Game experiment between Germans and French by Willinger et al [18]. The difference of transferred amounts by three different countries was tested. Mann Whitney Wilcoxon test was also used to test equality of distributions of sent ratios the H_0 was rejected for Estonian and Latvian sent ratios at 5% level. This pair was tested for stochastic inequality and the H_0 was rejected at 5%. The statistical evidence that Estonia tends to transfer larger values than Latvia while playing sender's role, was found. Due to the original data varying from 0 to 125 and the sample size being 30 in each country, other differences were not found using the Mann Whitney Wilcoxon test. To gain more power in tests, original data was decoded to $\{0, 1\}$. 1 was assigned if participant transferred no less than $\frac{1}{3}$ of the initial endowment and 0 otherwise. Such a strategy allows the sender to keep $\frac{2}{3}$ of the coins and rewards the receiver after transferred coins are tripled up with the same amount that was given to the sender in the first round. Then the receiver makes the decision on how much to return. The Z test was performed to the transformed data and statistical evidences at 10% significance level were found that Estonians tend to transfer more often amounts above $\frac{1}{3}$ of initial endowment than both Latvians and Lithuanians. No

differences were found between Latvians and Lithuanians. To look up for discrimination and to test if senders tended to act differently when sending money to one foreign country or another, Wilcoxon rank sum test was used and H_0's, that true location shift is equal to zero, were rejected for both Estonia and Latvia at 10% significance level, but wasn't rejected for Lithuania. It shows some weak differences how different foreign countries were treated in Estonia and Latvia at the first round of the Trust Game. It indicates some differences in trust patterns among the Baltic states. In the next sections the sender's and receiver's behavior is analyzed in more detail.

4 Modeling Trust and Reciprocity

4.1 Modeling the Senders' Behavior

In Section 2 , different impacts on sent amount in the Trust Game are discussed. The modeling of sender's behavior, or in other words, fraction sent to foreign players, starts with the benchmark model. This model is estimated as follows:

$$SR_i = \beta_0 + \beta_1 Age_i + \beta_2 Gender_{♀i} + \beta_3 Soc_i + \beta_4 lotSTR_i + \beta_5 Trust_i + \epsilon_i, \text{ where } i = 1, \ldots, N$$

Here

- SR_i stands for sent ratio, which is calculated as: $(\frac{\text{sent amount } (g_i)}{\text{Initial endowment } (e)})$,

- Age_i - age of a participant,

- $Gender_{♀}$ - gender dummy variable, equal to 1 if female, 0 if male,

- Soc stands for fraction contributed in the Social Dilemma game,

- $lotSTR_i$ is number of played safe lotteries in the Lottery game before deviating to risky lottery B,

- $Trust_i$ - trust measured according to the answers about the trust in people from foreign countries (question numbers 6-7 in Table 3),

- N is the number of participants.

In the estimation of this model, the sample was shortened only to the participants who deviated in the Lottery game once. Their answers are easier to interpret and their risk tolerance is the

exact determined as number of safe lotteries. It is shown in Table 23 that coefficients of $Gender_{♀}$ and Soc_i are highly significant in this benchmark model. Also, coefficient of $Trust$ is significant at 10%, and variable $lotSTR$ is borderline insignificant at the same 10% level, even though the sign of this coefficient is negative, as it was expected, that risk awareness negatively effects the transfers. If variable $Trust$ from the first model is replaced with the answers to World Value Survey question on trust, the coefficient of risk tolerance becomes significant at 10% level, see "Model (2)" in Table 23. The third model was estimated without insignificant Age variable. Co-efficient $Gender_{♀}$ is highly significant in all estimated models and negative. It indicates lower transfers from the female participants. It is also consistent with Wilcoxon rank sum test at 1% level, while testing sent amount by male and female participants . As expected, other regarding preferences (Soc_i) have a positive impact on the sender's transfers, since coefficient of Soc_i is statistically significant and greater than zero. Participants who contributed higher amounts in the Social dilemma game tended to transfer more in the Trust game.

In order to estimate model for the whole sample and because of the borderline significance at 10% level of risk tolerance, the variable of risk tolerance ($lotSTR_i$) was excluded from the fourth model and the model was estimated on the same basic variables only for the whole sample. In this model, the coefficient on variable Trust is highly significant at 1% level. In the fifth model, the GDP per capita in PPP (GDP_{ppp}) was included as a group specific variable. It is found significant and raise the question if trust is a "luxury good" and is caused by the well being. To test this hypothesis in more detail, more countries (groups) should be included in the experiment. In the sixth model, percentage difference between GDP per capita in sender's and receiver's countries was included to capture group differences, coefficient of this exogenous variable is significant at 10 % level. Moreover, variable $Press$ was included in this model. It represents information avail-ability about foreign Baltic states in sender's home country. This variable was gathered using R and particularly library XML. The RSS feeds of the biggest news portals in each Baltic State were followed for a few months, and the headlines of all available articles were collected. This vari-able was constructed as a fraction of headlines, where a particular foreign state was mentioned, compared to the total number of headlines. The coefficient of this variable is significant at 5% level. The negative sign suggests that press coverage negatively effects senders behavior and thus trust. It is worth mentioning that during the modeling process all the attempts to include variables measured by quotations (number 1, 2, 4, 8, 9, 10) in Table 3 were unsuccessful. Neither of Unification, Media, Visits or Friendship coefficients were significant in any model.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
(Intercept)	0.46**	0.63***	0.43**	0.12	−0.38	0.46***
	(0.19)	(0.16)	(0.19)	(0.10)	(0.30)	(0.07)
Age	−0.02	−0.02				
	(0.02)	(0.02)				
$Gender_{♀}$	−0.23***	−0.22***	−0.22***	−0.11***	−0.09***	−0.09***
	(0.06)	(0.06)	(0.05)	(0.03)	(0.03)	(0.03)
Soc	0.38***	0.42***	0.35***	0.52***	0.56***	0.56***
	(0.13)	(0.13)	(0.13)	(0.06)	(0.06)	(0.06)
lotSTR	−0.02	−0.03*	−0.02*			
	(0.01)	(0.01)	(0.01)			
Trust	0.07*		0.07*	0.08***		
	(0.04)		(0.04)	(0.03)		
WVS		0.09*				
		(0.05)				
GDP_ppp					0.00**	
					(0.00)	
GDPDiffP						0.20*
						(0.11)
PresP						−22.92**
						(9.97)
R^2	0.41	0.41	0.40	0.39	0.39	0.39
Adj. R^2	0.37	0.37	0.37	0.38	0.38	0.37
Num. obs.	86	86	88	180	180	180

$^{***}p < 0.01, ^{**}p < 0.05, ^{*}p < 0.1$

Table 23: Modeling the Fraction Transfered by Senders in the Trust Game

4.2 Modeling the Receivers' Behavior

The receiver's decision in the Trust Game essentially becomes the decision made by the Dictator from the Dictator game. When receiver makes the decision, how much of the received coins to

return, the game ends and the player A has no opportunity to return any money. In the experiment discussed in Section 3, participants were asked to make the decision how many coins to return to senders from both foreign Baltic States. The most extended model was estimated as follows:

$$RR_i = Gender\,♀_i + Unification_i + Visits_i + Soc_i + RecMore_i + RecMoreThanSent_i + \epsilon_i$$

Here

- RR stands for ratio returned and is calculated as $\frac{\text{Retrunt amount}}{\text{Total received amount}}$,

- $Gender\,♀$ is dummy variable if participant is a woman,

- $Unification$ is a dummy variable registering an answer to Unification question, equal to one if participant does not mind to be introduced from Baltic States,

- $Visits$ is dummy variable if participant has visited sender's country,

- Soc is a fraction contributed in the Social dilemma game.

Since receivers were asked simultaneously to return the money to senders from both foreign Baltic States,

- $RecMore$ is a dummy variable equal to one if receiver got from that sender more money than compared to the transferred amount by sender from another foreign country,

- $RecMoreThanSent$ is a dummy variable equal to one, if receiver in the first round, when he/she was asked to play as sender, transferred less than sender from the corresponding country.

The estimated results of this model are provided in Table 24, Model 1. In the other models the insignificant coefficients were excluded. The procedure was repeated till the fifth model, in which only two significant variables $Gender\,♀$ and Soc left. In the sixth model, other regrading preferences measured by Soc were divided into three variables, in order to check if other regarding preferences effect participants from three Baltic states at different level.$Soc : EE$ is fraction contributed in the Social dilemma game by Estonians, $Soc : LV$ - by Latvians and $Soc : LT$ - by Lithuanians.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
(Intercept)	0.31***	0.35***	0.36***	0.38***	0.33***	0.32***	0.32***
	(0.09)	(0.09)	(0.07)	(0.07)	(0.06)	(0.06)	(0.06)
Gender ♀	−0.02	−0.01	−0.07	−0.07*	−0.08*	−0.09**	−0.08**
	(0.05)	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Unification	−0.06						
	(0.06)						
Visits	0.08						
	(0.06)						
Soc	0.22**	0.24**	0.20**	0.20**	0.23***		
	(0.09)	(0.09)	(0.08)	(0.08)	(0.08)		
RecMore	0.04	0.04	0.04				
	(0.05)	(0.05)	(0.04)				
RecMoreThanSent	−0.10*	−0.10*	−0.07	−0.06			
	(0.05)	(0.05)	(0.05)	(0.04)			
Friends	−0.01	−0.01					
	(0.05)	(0.05)					
Soc:EE						0.19**	
						(0.08)	
Soc:LV						0.22**	
						(0.09)	
Soc:LT						0.35***	0.35***
						(0.09)	(0.09)
Soc:notLT							0.20***
							(0.08)
R^2	0.15	0.13	0.10	0.09	0.08	0.11	0.11
Adj. R^2	0.09	0.09	0.08	0.08	0.07	0.09	0.10
Num. obs.	118	118	178	178	178	178	178

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table 24: Modeling the Returned Ratio in the Trust Game

For the coefficients of $Soc : EE$, $Soc : LV$, $Soc : LT$, the following hypothesis were tested: $H_0 : \beta_{Soc:EE} - \beta_{Soc:LV} = 0$, $H_0 : \beta_{Soc:EE} - \beta_{Soc:LT} = 0$ and $H_0 : \beta_{Soc:LV} - \beta_{Soc:LT} = 0$, the results are given in the table 25.

H_0	Pr(>|t|)
$H_0 : \beta_{Soc:EE} - \beta_{Soc:LV} = 0$	0.694
$H_0 : \beta_{Soc:EE} - \beta_{Soc:LT} = 0$	0.025
$H_0 : \beta_{Soc:LV} - \beta_{Soc:LT} = 0$	0.0667

Table 25: Testing for equality of coefficients

H_0 was not rejected for coefficients of $Soc : EE$ and $Soc : LV$ even at 1 % significance level, whereas weaker or stronger differences how other regarding preferences effected returned ration (RR) were found when comparing coefficient of Lithuanians with the other two Baltic States. In the last 7th model, coefficient of other regarding preferences was estimated separately only for participants from Lithuania. This last model had the best adjusted R^2 among the all previously discussed.

The results show that other Regarding preferences measured as a contributing fraction in Social Dilemma Game have statistically significant and positive impact on returned ratio (RR), the coefficient of dummy variable $Gender$ ♀ is negative and significant, it shows female tendencies to return smaller ratios in this sample. These results are also consistent with Wilcoxon rank sum test at 8% level, when comparing average returned amount by men and women. But the pretty small R^2 leaves room for the discussion on other important explanatory variables that affect the returned ratio and how these can be sampled.

5 Conclusion

The main focus of this paper lies on trust and reciprocity. Thus, the results of the Trust Game were the most intriguing. One can conclude that even in such a historically and politically over last 200 years similar region as the Baltic States, there are differences among them in trust, measured either as the fraction transferred being a sender in the Trust game or as the categorical answers to the trust questions (questions number 6, 7 and 8 in Table 3).

Statistical evidence was found that Estonians tended to transfer the largest amount and, in this sense, trusted others the most. These results are consistent with the answers to the trust question.

Participants from Estonia showed the highest trust of all three Baltic States while answering these questions. According to the answers, the higher level of trust was observed among Lithuanian participants, than among their Latvian counterparts. While testing the distributions equality of the sent amount in the Trust Game, no evidence of differences was found between Latvia and Lithuania. These differences might vanish due to the complexity of the sender's decision. This points out the importance of methodology when measuring such attribute as trust. Interestingly, Estonia is the most Nordic country among the Baltic States and Bornhorst et al. [4] reported higher trust in the North than South in their experimental setting, although all three Baltic States would be assign to the North in their approach. In the western-central Europe region The heterogeneity of trust between Germany and France was observed by Willinger et al. [18]).

Speaking about the findings in Willinger et al. [18]) they tested and did not report differences between transfers to foreign or local players, therefore no discrimination was found in their experimental setting. In the experiment reported in this thesis, participants were not asked to play Trust game with their countrymen, but to play it with two players from both foreign countries. Due to such design of the experiment, discrimination could be tested. The discrimination itself should be seen not only as an act, which favors one group over another, but also as an ability to distinguish two different groups. Some weak differences in treatment of foreign Baltic States in Estonia and Latvia are reported, whereas there were no statistical evidences found that the transferred amount from Lithuanian senders to the other two Baltic States in the Trust game were drawn from the two different distributions.

The sent fraction in the first round of the Trust Game was modelled on the individual level in order to better understand the sender's problem.

When modeling the sent fraction in the Trust Game, significance of other-regarding preferences, risk tolerance and answers to the trust questions was reported. Such findings are consistent with ones reported by Sapienza et al. (2013) [16]. Coefficient of Gender dummy variable was found to be significant as well. It is worth mentioning that the actual profits gained in the trust game do not differ between males and females, as it is also reported in the experimental setting of Bornhorst et al. [4], but the average transfers in the senders role do.

Speaking about reciprocity and the returned amount by the receivers in the Trust game, no statistical evidences of differences in the returned distributions were found. One can say that returned ratios by participants from all three Baltic States are drawn from the same distribution, even though on average Lithuanians returned the highest fractions and Latvians the smallest.

As mentioned in Section 3.6.6, the differences in reciprocity were not observed in other cross-cultural experimental settings that also included the Trust Game (e.g. papers by Bornhorst et al. [4] or Willinger et al. [18]).

While modeling the returned ratio by receivers in the Trust Game, the significance of other regarding preferences and gender is noticed. Female participant showed smaller reciprocity level and statistically returned less of the total received money.

In the one shot Trust Game the higher transfers in the first round by males did result in the higher pay-offs, since females tended to return overall smaller fractions of the received money. On average females returned 0.39, whereas males half of the total received amount.

The results of other two games played during the experiment, as well as positive transfers in the Trust Game show the difference between theoretical predictions of the games under some popular assumptions and the actual empirical results. In the Lottery Game, it was observed that among the participants with one (zero) deviation point(s), very few of them played this game optimally under the risk neutrality, and majority of those participants showed a higher or lower level of risk awareness, as it also reported in the original paper by Holt and Laury(2002)[10]. In the Social Dilemma game, the *free ride* hypothesis failed as well. Testing the results of this game, it was also found that Estonians contributed the largest amounts out of all three Baltic States.

One can learn of this whole story that any assumptions and simplifications of the models should be taken with caution: too few assumptions or simplifications of the economic agent's preferences can lead to the predictions that fail in the real life. Aggregation/calibration of the data and assumptions that individuals from countries with similar historical paths should behave homogeneously in some situations can lead to the loss of some important perspectives. The estimation of sent ratios on individual basis showed, that the mentioned individual characteristics play an important role in the sender's behavior. Also, it is worth mentioning that there was no statistical evidence found that coefficients of foreign countries visits, preferences about introduction in foreign country, as well as age and etc. are different from zero in the models of sent and returned ratios. It is likely due to the regional specifics and sample properties. The gathered sample displayed a high number of foreign countries visits and did not vary much in age. The introduction question very likely did not capture the participants' opinion and feelings about the region. The willingness to be introduced from the home-country rather than from the Baltic States not necessary indicates negative feelings towards the region.
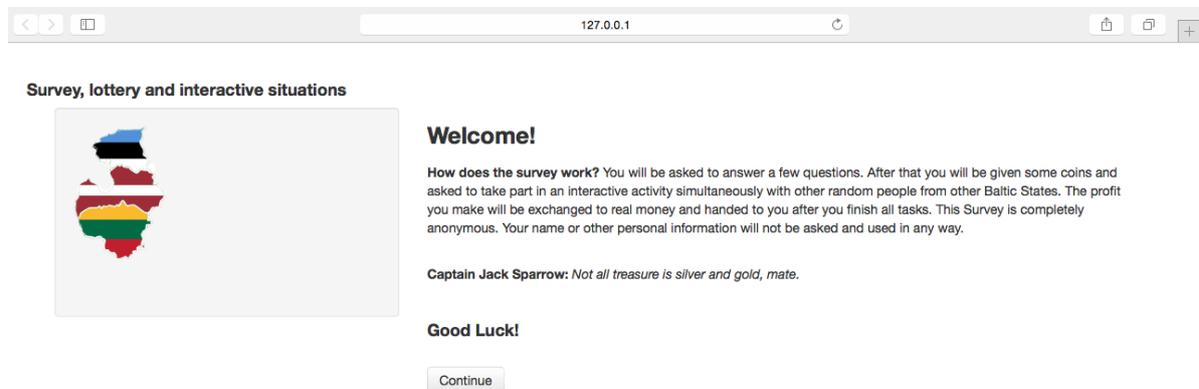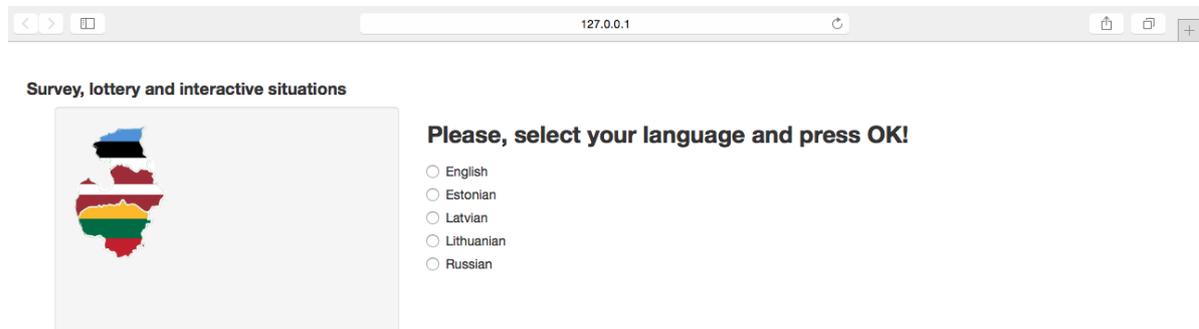
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Appendix A

Screen shots of application used in the empirical experiment.

Survey, lottery and interactive situations

Please, select your language and press OK!

○ English
○ Estonian
○ Latvian
○ Lithuanian
○ Russian

Survey, lottery and interactive situations

Welcome!

How does the survey work? You will be asked to answer a few questions. After that you will be given some coins and asked to take part in an interactive activity simultaneously with other random people from other Baltic States. The profit you make will be exchanged to real money and handed to you after you finish all tasks. This Survey is completely anonymous. Your name or other personal information will not be asked and used in any way.

Captain Jack Sparrow: *Not all treasure is silver and gold, mate.*

Good Luck!

Continue

Survey, lottery and interactive situations

Please, enter your ID-code to continue

ee6822

Continue

Survey, lottery and interactive situations

Your identification was successful! Please, press "Continue" to start the survey!

Continue

Survey, lottery and interactive situations

Q 1: How old are you?

Please Select:

- ○ 16
- ○ 17
- ○ 18
- ○ 19
- ○ 20
- ○ 21
- ○ 22
- ○ 23
- ○ 24
- ○ 25
- ○ 26
- ○ 27
- ○ 28
- ○ 29
- ○ 30
- ○ 31
- ○ 32
- ○ 33
- ○ 34
- ○ 35+

Survey, lottery and interactive situations

Q 2: What are your religious beliefs?

Please Select:

- ○ Roman Catholic
- ○ Lutheranism
- ○ Orthodox or Old Believer
- ○ Non religious
- ○ Other

Survey, lottery and interactive situations

Q 3: Are you Male or Female?

Please Select:

○ Male

○ Female

Survey, lottery and interactive situations

Q 4: Suppose you are in foreign country and you are introduced to others as a person from Baltic States. Would you prefer more to be introduced as a person from your own country or you do not mind that at all?

Please Select:

○ Prefer to be introduced as person from my own country

○ I do not mind to be introduced as a person from Baltic States

Survey, lottery and interactive situations

Q 5: Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?

Please Select:

○ Most people can be trusted.

○ Need to be very careful.

Survey, lottery and interactive situations

Q 6: Now I would like to ask you how much trust you have in people from Latvia?

Please Select:

○ a lot of trust

○ some trust

○ not very much trust

○ no trust at all

Survey, lottery and interactive situations

Q 7: Now I would like to ask you how much trust you have in people from Lithuania

Please Select:

○ a lot of trust
○ some trust
○ not very much trust
○ no trust at all

Survey, lottery and interactive situations
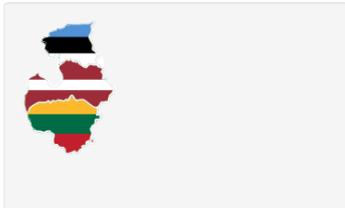
Q 8: About which country do you follow (have followed) news on any type of media (TV, newspapers, internet)?

Please Select:

○ Latvia
○ Lithuania
○ Both
○ None

Survey, lottery and interactive situations

Q 9: Which of the below listed countries have you visited?

Please Select:

○ Latvia
○ Lithuania
○ Both
○ None

Survey, lottery and interactive situations

Q 10: From which below listed country do you have friends?

Please Select:

○ Latvia
○ Lithuania
○ Both
○ None

Survey, lottery and interactive situations

Q 11: Part of the survey in which you can earn money (100 coins are equal to 1 Euro).

Situation One

Description You have 125 coins, you can put any amount of your 125 coins in the joint pot. All the money in the pot will be doubled up and equally spread among you and other 2 players form other Baltic States who can also put any amount of their 125 coins in this pot. All kept and received coins will be instantly transferred to your account, at end of the survey, exchanged to real money and handed to you.

Please, move the slider / enter the number into the field to select amount you want to transfer.

Choose the amount you want to transfer

[   ]

0   125

☐ I confirm, I want to transfer 0 coins!

Situation Two

Conditions: There are 10 hats, with 10 balls in each of them. You can choose between two lotteries with different winnings (A or B). Only the numbers of blue and red balls are different in each hat. At the end of this survey one out of ten hats will be randomly selected and your chosen lottery (A or B) for that particular hat will be played. The amount you win will be exchanged to real money and handed to you after you finish this survey.

Please choose your preferred lottery for each hat.

Hat number 1 : with 1 blue ball(s) and 9 red ball(s) in it.
- ○ A: if a blue ball is drawn, you win 200, if a red one 160 coins
- ○ B: if a blue ball is drawn, you win 385, if a red one 10 coins

Hat number 2 : with 2 blue ball(s) and 8 red ball(s) in it.
- ○ A: if a blue ball is drawn, you win 200, if a red one 160 coins
- ○ B: if a blue ball is drawn, you win 385, if a red one 10 coins

Hat number 3 : with 3 blue ball(s) and 7 red ball(s) in it.
- ○ A: if a blue ball is drawn, you win 200, if a red one 160 coins
- ○ B: if a blue ball is drawn, you win 385, if a red one 10 coins

Hat number 4 : with 4 blue ball(s) and 6 red ball(s) in it.
- ○ A: if a blue ball is drawn, you win 200, if a red one 160 coins
- ○ B: if a blue ball is drawn, you win 385, if a red one 10 coins

Hat number 5 : with 5 blue ball(s) and 5 red ball(s) in it.
- ○ A: if a blue ball is drawn, you win 200, if a red one 160 coins
- ○ B: if a blue ball is drawn, you win 385, if a red one 10 coins

Hat number 6 : with 6 blue ball(s) and 4 red ball(s) in it.
- ○ A: if a blue ball is drawn, you win 200, if a red one 160 coins
- ○ B: if a blue ball is drawn, you win 385, if a red one 10 coins

Hat number 7 : with 7 blue ball(s) and 3 red ball(s) in it.
- ○ A: if a blue ball is drawn, you win 200, if a red one 160 coins
- ○ B: if a blue ball is drawn, you win 385, if a red one 10 coins

Hat number 8 : with 8 blue ball(s) and 2 red ball(s) in it.
- ○ A: if a blue ball is drawn, you win 200, if a red one 160 coins
- ○ B: if a blue ball is drawn, you win 385, if a red one 10 coins

Hat number 9 : with 9 blue ball(s) and 1 red ball(s) in it.
- ○ A: if a blue ball is drawn, you win 200, if a red one 160 coins
- ○ B: if a blue ball is drawn, you win 385, if a red one 10 coins

Hat number 10 : with 10 blue ball(s) and 0 red ball(s) in it.
- ○ A: if a blue ball is drawn, you win 200, if a red one 160 coins
- ○ B: if a blue ball is drawn, you win 385, if a red one 10 coins

Situation Three

Conditions. Sender-Receiver interaction.

A sender will send the coins to a receiver from a foreign Baltic country, the sent amount will then be multiplied by 3, and the receiver will then decide how many coins to send back. At first You will be asked to be a sender and send some coins (from 0 to 125) twice - once to each foreign Baltic Country (Latvia and Lithuania). You will also be a receiver and receive coins from both of foreign Countries, three times as many as (or if) senders from those countries will decide to send. Receivers from foreign countries will be randomly selected and will only know your age and where you are from. The same information will be available to you. Transactions are proceeded simultaneously.

Only the sent coins will be **multiplied by 3**, but not the returned. For each coin sent the receiver will receive triple as many coins as you have sent. For example, if you send 0 coin, receiver receives 0 coins, if you decide to send 1 coin, receiver receives 3 coins, if 2, received amount is 6 and so on. Your total earnings will be accumulated from your kept and returned coins. At the end of the survey all collected coins will be exchanged to real money.

Good Luck!

Please wait! You will start in a moment!

You are a sender now!

Please, move the slider / enter the number into the field to select amount you want to transfer.

31 y.o. Latvian is waiting for your transfer.

Choose the amount you want to transfer

| |

0   125

☐ I confirm, I want to transfer 0 coins!

20 y.o. Lithuanian is waiting for your transfer.

Choose the amount you want to transfer

| |

0   125

☐ I confirm, I want to transfer 0 coins!

Survey, lottery and interactive situations

Situation Three

You are a receiver now!

Please, move the slider / enter the number into the field to select amount you want to transfer.

You received 22 coins from a 31 y.o. Latvian ! Choose any amount you want to return between 0 and 66

Choose the amount you want to transfer

```
[                    ]
```

0   66

☐ I confirm, I want to transfer 0 coins!

You received 64 coins from a 20 y.o. Lithuanian!Choose any amount you want to return between 0 and 192

Choose the amount you want to transfer

```
[                    ]
```

0   192

☐ I confirm, I want to transfer 0 coins!

Survey, lottery and interactive situations

Summary Results

First Situation

First Situation: where you put money in joint pot, you collected 173 coins !

Second Situation with 10 hats

The hat with 2 blue ball(s) was selected red ball was drawn and you won 160 .

Third situation

As a sender
You transferred to 31 y.o. Latvian 62 coins and 0 coins were returned to you.
You transferred to 20 y.o. Lithuanian 73 coins and 119 coins were returned to you.
As a receiver
You received 22 coins from a 31 y.o. Latvian you returned 0 from total 66 coins .
You received 64 coins from a 20 y.o. Lithuanian you returned 0 from total 192 coins .

You collected a total of 492 coins while investing your coins and trading with other people.

In total you earned: 825
100 coins are equal to 1 Euro

Abstract/Zusammenfassung

Abstract

This thesis contributes to the better understanding of trust and reciprocity among the Baltic States. Participants of the experiment were asked to play the Trust Game and to answer trust related questions. The differences among the Baltic States in the trust were measured either by answers to the related questions or by sent fractions in the Trust Game. Estonian participants were found to be the most trusting. No differences are reported in the returned amount and thus reciprocity. Moreover, significant impact not only of trust but also of gender, other regarding and risk preferences on sent ratio is observed.

Keywords Game Theory, Experiments, Trust, Reciprocity, Trust Game, Regional Differences.

Zusammenfassung

Diese Arbeit leistet einen Beitrag zu einem besseren Verständnis des Vertrauens und der Reziprozität zwischen den baltischen Staaten. Die Teilnehmer des Experiments wurden gebeten, an einem Vertrauensspiel Teil zu nehmen, und die vertrauensbezogenen Fragen zu beantworten. Die Unterschiede im Vertrauen zwischen den baltischen Staaten wurden durch Beantwortung von den Fragen, bzw. durch Teilnahme an einem Vertrauensspiel gemessen. Es wurde herausgefunden, dass die Esten jene sind, die am meisten vertrauen. Die im Spiel zurückgemeldete Anteile zeigten keine Unterschiede in der Reziprozität. Außerdem werden wesentliche Auswirkungen nicht nur des Vertrauens, sondern auch des Geschlechts, sowie auf andere bezogene Präferenzen und Risikopräferenzen auf die gemeldeten Anteile beobachtet.

Stichwörter Spieltheorie, Experiment, Vertrauen, Reziprozität, Vertrauensspiel, regionale Unterschiede.

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Vilnius, Lithuania

Personal skills and competences

Mother tongue(s)

Litrhuanian

Other language(s)

Self-assessment
European level[(*)]

	Understanding			Speaking				Writing	
	Listening		Reading		Spoken interaction		Spoken production		
German	C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user
English	C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user

[(*)] *Common European Framework of Reference (CEF) level*

Social skills and competences

Keen on learning, friendly, communicative and punctual. During my studies these characteristics helped me to work efficiently in a group and alone, as well as to think outside the box.

Organizational skills and competences

Able to manage limited time resources, prioritize tasks, work in a team or individually. These skills were acquired or used in the university projects and especially helped me to organize the experiment for my master thesis.

Computer skills and competences	– Advanced knowledge of R, Eviews - intermediate user.
	– Good knowledge of Microsoft Office.
	– Document mark-up and preparation: Latex
	– Programming basics: SQL, JAVA, C, C++.
	– Text editors: GNU Emacs.
Driving licence(s)	B