Is Cheating a National Pastime? Experimental Evidence. DRAFT *

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Abstract

This paper experimentally examines the relationship between productivity and performance on one hand, and proclivity toward dishonest behavior on the other. In three countries (Chile, Russia, and UK) we conduct an experiment similar to a public goods game: subjects are assigned to groups of four; earn money through a real effort task; report all, none, or some part of their income; which is subject to deductions that are distributed to other members of their group. We find that performance at the real effort task is positively correlated with maximal dishonesty, when the gains from misrepresenting private information are fully exploited, and is negatively correlated with limited dishonesty. This relationship is similar across countries, although cheating levels vary quite significantly.

And again I say to you, it is easier for a camel to go through the eye of a needle, than for a rich man to enter into the kingdom of God. (Gospel of Matthew 19:24)

1 Introduction

Opportunities to misrepresent private information to one's advantage are everywhere, and are readily exploited: people evade taxes, politicians lie to increase public support, students cheat on exams, and managers deceive shareholders, to name a few examples. The costs that dishonesty and fraud impose on the society are enormous. Health care fraud may amount to up to $272 billion in US alone (Berwick and Hackbarth, 2012), while the losses to occupational fraud have been estimated at 5% of company revenue worldwide (Association of Certified Fraud Examiners, 2016). Dishonesty is a barrier to economic transactions, and, at the country level, the belief that people can be trusted is a strong correlate of economic output (Knack and Keefer, 1997).

At the same time, dishonesty is not universal. Many people behave honestly or idealistically, and a growing body of research suggests that many individuals do not cheat even when it is strictly in their material interest to do so. Honest behavior, alongside cheating, has been observed across a wide variety of experimental designs (Rosenbaum, Billinger and Stieglitz, 2014; Gneezy, Rockenback and Serra-Garcia, 2013; Jacobsen, Fosgaard and Pascual-Ezama, 2017). For example, when reporting a privately observed die roll or coin toss, with payment conditional on the reported value, individuals, on average, exploit less than half of the potential advantage (Abeler, Nosenzo and Raymond, 2016).

In this work, we use a computerized laboratory experiment to investigate to what extent the tendency to behave dishonestly can be attributed to individual ability and productivity. A sense of entitlement due to talent, income, or social status can be a catalyst for dishonest behavior (Major and Testa, 1989; Major, 1994; Piff, 2014), and higher social class has been associated with decreased attentiveness to others and less prosocial behavior (Piff and Robinson, 2017). Cheating in particular has been associated with competitive success (Schurr and Ritov, 2016), intelligence (Sarzyńska et al., 2017), perceptions of one's creativity (Gino and Ariely, 2012;

Vincent and Kouchaki, 2015), or social status (Dubois, Rucker and Galinsky, 2015; Piff et al., 2012). Understanding the link between ability and dishonesty is ever more important in a world marked with growing disparities in income and wealth, technological change, and unequal political representation (Solt, 2008; Piketty and Zucman, 2014; Frey and Osborne, 2017).

A puzzling aspect of dishonest behavior that we account for is that individuals often do not act dishonestly to the full extent. It is common for cheaters not to maximize their material benefits, limiting the degree to which they distort the truth (Gino and Ariely, 2016). Although lying can be reduced by material incentives, such as avoiding being exposed as a liar (Kajackaite and Gneezy, 2015; Gneezy, Kajackaite and Sobel, 2016; Khalmetski and Sliwka, 2017), internal rewards to honest behavior also play an important role, and limited lying was observed in experiments where the experimenter could not identify individual decisions (Fischbacher and Follmi-Heusi, 2013).

A prevailing explanation for limited lying is that it allows the individuals to maintain a positive self-concept and benefit from thinking of themselves as honest, even if lying cannot be detected by an outside observer (Mazar, Amir and Ariely, 2008; Falk and Tirole, 2016). The amount of dishonesty that is considered legitimate by an individual is specific both to the person and the circumstances under which the decision is made (Gino and Ariely, 2016; Shalvi et al., 2015).

We also investigate whether the preferences toward truthfulness vary continuously throughout the population, or can be classified into a small number of behavioral types (such as those who cheat at every opportunity, ethical individuals who never lie, and limited cheaters) based on individual ability. Whether one or the other is true will have implications for how cheating responds to punishment and other material incentives. Previous arguments both in favor (Hurkens and Kartik, 2009) and against (Gibson, Tanner and Wagner, 2013) the type-based model treated lying as a binary choice and, therefore, did not consider the possibility of limited lying.

Finally, we want to know whether our results are robust across different cultural contexts. Previously, prevalence of cheating in a country was found to be correlated with corruption and executive constraints (Gächter and Schulz, 2016) and a history of economic backwardness (Hugh-Jones, 2016). At the same time, Holm and Kawagoe (2010), Pascual-Ezama et al. (2015), and Mann et al. (2016) did not find strong cross-national differences in the levels of truth-telling. At the same time, none of the research that we are aware of compared the correlates of cheating in different countries.

The design of our experiment followed Duch and Solaz (2016). Participants were paid proportional to their performance in a real-effort task (making additions of two two-digit numbers over a minute), then had to declare the amount that they earned, and were taxed based on the amount that they declared. Participants were informed that the declared earnings would be audited with 0% probability, making cheating free and strictly in the subjects' interest. The tax proceeds were then redistributed between the 4 members of the participant's group. Our experiment involved 10 rounds of real effort task, followed by income declaration. This way we were able to separate the effect of performance in a given round from the subject's average performance over 10 rounds.

Both the true and the declared levels of income were observed by the experimenter, so we were able to differentiate between honest behavior, as well as maximal and limited cheating. This was not the case in Gill, Prowse and Vlassopoulos (2013) (which is, to our knowledge, the only experimental work that compared cheating to RET performance), where the participant was asked to report the last digit of her best friend's phone number, and was paid the amount proportional to the number reported. Such a request offered two distinct opportunities to bend truth. First, the participant could simply misreport the number. Second, one could try to remember a person whose phone number has a higher last digit, and report truthfully — thus, maintaining a more positive self-concept, without the experimenter being able to determine what taken place.

Our experiment involved over one thousand participants, and was replicated in three different countries — Chile, Russia, and the UK (so, we had over 10 thousand observations). In all national contexts, individual ability was positively correlated with maximal cheating. Depending on the country, a top-performing participant was between 17.5% and 36.2% more likely to have declared zero income, compared with a worst-performing participant in the same country. On the contrary, high-performing participants were less likely to have participated in limited cheating.[1]

Second, the participants demonstrated a broad range of preferences for truthfulness, and could not be classified in several discrete groups, such as the ethical and economic types. We obtained this result by using a structural model to estimate the intrinsic cost of misreporting 1 unit of income for each individual. In each country, the distribution of this marginal cost across individuals was found to be unimodal.

Our main findings are corroborated by several additional results. We find the performance of a participant at the real-effort tasks is largely independent of either the tax rate in the experimental session, or other experimental conditions (such as the amount received for each successful addition, or whether the participant had any windfall profits in the previous period). This allows us to simplify our modeling approach and assume that the individuals supply their effort inelastically. The effect of performance on honesty is also seen in the outcome of a task where the participants were asked to roll a six-sided die and report the privately observed outcome (similar to Fischbacher and Follmi-Heusi (2013)), receiving compensation proportional to the number reported. In both UK and Chile, high-performing participants were more likely to report higher values, which implies that, on average, they were less honest.

Finally, we analyzed the time it took the participants to make the decision to declare income. Maximal lying is the quickest, taking 3.72 seconds on average (SD=7.65 seconds). Honest decisions are slower, requiring 9.43 seconds on average (SD=20.78), while limited lying takes the longest, requiring 12.38 seconds on average (SD=19.35). These differences are highly significant and consistent across the three countries. We believe that these findings indicate that limited and maximal lying are distinct phenomena, as they are modeled in this work .

Our paper is structured as follows. In Section 2 we propose a model of cheating calculus that accounts for the possibility limited cheating through self-deception in the spirit of Mazar,

[1]The experimental data from the UK was previously analyzed in Duch and Solaz (2016), who found that the likelihood of reporting less than the full amount of income was positively correlated with performance at the real effort task. We find that this result was driven entirely by the higher likelihood of maximal cheating among high-performing participants.

Amir and Ariely (2008). We then formulate the research hypotheses relative to the model. Section 3 describes the design of the experiment and the main variables of interest. Section 4 outlines the main results of the experiment. In Section **??** we establish several supplemental results concerning RET performance, the die tossing game, and the participant reaction time. Section 6 concludes.

2 A model of cheating calculus

Consider an individual who chooses the level of truth-telling $f \in [0,1]$, where $f = 1$ is being completely honest and $f = 0$ is lying maximally. We assume that the individual's monetary payoff decreases linearly with f. Without loss of generality, we can think of an individual with taxable income y, facing tax rate t, and deciding what fraction f of income to declare. The utility function of such an individual is equal to

$$U = y(1 - \eta f t) + B - C(f, y). \tag{1}$$

The value B is the individual's non-taxable income. The parameter $\eta \in (0, 1]$ reflects the net cost of telling the truth,[2] and $C(f, y)$ is the cost of cheating.

We assume that there is no punishment for cheating, so all costs of cheating are intrinsic and are determined solely by the individual's preferences. An individual's marginal cost of cheating may be increasing in $1 - f$. Specifically, we let the marginal cost of cheating be zero if f is at or above a certain threshold value $\bar{f} \in (0, 1]$, and assume that it is constant for $f \in [0, \bar{f}]$. This gives us the following cost function:

$$C(f, y) = \begin{cases} 0, & f \geq \bar{f} \\ \bar{c}y(\bar{f} - f), & f < \bar{f}. \end{cases}$$

A possible mechanism behind increasing marginal costs of cheating is self-deception. An individual does not believe that she is cheating, and does not incur the cost, if f is at or above $\bar{f}$

[2]This can account for the fact that a fraction of the tax proceeds can be redistributed back to the individual, and that the individual can derive an altruistic benefit from having his taxes given to others.

(which will be her *self-deception threshold*). An individual who is not capable of self-deception will have $\bar{f} = 1$. For such an individual, the cost of cheating will be positive even if the amount of cheating is very small. The value $\bar{c}_i$ is the intrinsic *marginal cost of cheating*, incurred for every unit of income not declared by the individual.

The solution to maximizing (1) will depend on the values of the marginal cost of cheating and the self-deception threshold, and is summarized as follows:

$$f^* = \begin{cases} 0, & \bar{c} < \eta t \\ \bar{f}, & \bar{c} \geq \eta t \end{cases} \tag{2}$$

If the marginal cost $\bar{c}$ is sufficiently small, the individual will engage in maximal cheating, exhibiting economic-type behavior. If the marginal cost is large, then the individual will either behave honestly, or, if $\bar{f} > 1$, will engage in limited cheating.

We now formulate our research hypotheses in terms of this model. Previously, Duch and Solaz (2016) found that subjects with above-median performance were more likely to declare less than 100% of their income. We extend this analysis to a larger dataset, and investigate whether more able subjects cheat more due to smaller marginal costs of cheating and/or a result of self-deceptive behavior.

HYPOTHESIS 1A (Maximal cheating increases with ability): *The marginal cost should be smaller if the person is of higher ability.*

HYPOTHESIS 1B (Limited cheating increases with ability): *The likelihood and magnitude of self-deception should be higher if the person is of higher ability.*

We then address the question whether the population falls into several discrete behavioral types, such as the economic types with zero intrinsic costs of lying, and the ethical types with very high lying costs. Alternatively, people may exhibit a broad range of preferences toward cheating, falling in between these two extreme cases. In that case, the marginal cost of cheating will vary continuously, and small changes in external conditions (such as the tax rate) should not induce a large fraction of individuals to change their behavior.[3]

HYPOTHESIS 2 (No discrete behavioral types): *The distribution of marginal cost of cheating in the population is unimodal.*

One would expect honesty (or the other side of that coin —cheating) to be affected by the prevailing social norm. If one believes that it is acceptable to cheat in a certain situation (say declaring earnings for tax purposes) then it is more likely that one would cheat. There is experimental literature that attests to the tendency of individuals to act in accordance with their perception of the social norm (Bicchieri, 2002; Fehr and Fischbacher, 2004*a*,*b*; Cialdini, Reno and Kallgren, 1990; John, Sanders and Wang, 2014, among many others).

HYPOTHESIS 3A (Social norms affect maximal cheating): *The marginal cost of cheating should be lower if the person perceives that cheating is socially acceptable, or if he believes that other players previously cheated.*
HYPOTHESIS 3A (Social norms affect limited cheating): *The likelihood and magnitude of self-deception should be higher if the person perceives that cheating is socially acceptable, or if he believes that other players previously cheated.*

Our final hypothesis is concerned with the dynamics of dishonest behavior. Recent experimental evidence involving MRI scans suggests that the emotional response to one's dishonest behavior diminishes with past transgressions (Garrett et al., 2016; Engelmann and Fehr, 2016). Therefore, we should expect that past cheating should make future cheating more likely.

HYPOTHESIS 4 (Dependence on past actions): *The marginal cost of cheating should be smaller, and the likelihood and magnitude of self-deception should be higher, if the person has cheated recently.*

[3]For a setting where the individuals made a binary decision whether to lie, Gibson, Tanner and Wagner (2013) rejected the hypothesis that there were only two behavioral types.

A slightly different set of predictions follows if cheating is moderated by one's concerns over being perceived as a liar. Such reputation concerns were present in Kajackaite and Gneezy (2015) and Gneezy, Kajackaite and Sobel (2016), where subjects were found to cheat more often if the experimental conditions prevent the experimenter from knowing that the subject has cheated.

In our setting, all decisions made by the subjects are known to the experimenter. If the subjects are concerned over their reputation, then the cost of cheating should be lower once the individual has knowingly cheated. At the same time, self-deceptive cheating should have no such effect on future costs, if the subject believes he has not cheated and thinks that the experimenter shares this belief.[4]

HYPOTHESIS 5 (Reputation concerns): *The marginal cost of cheating should be smaller if the person has recently declared zero income.*

3 The Experiment

In order to test the hypotheses, our experiment included the following features. First, it is an incentivized experiment with clear opportunities to cheat. The design, as described below in detail, ensures that cheating is possible and is always the utility maximizing behavior. Second, we implement multiple treatments, with the objective of testing cheating under a variety of contexts and mechanisms that can potentially moderate cheating behavior. Third, each subject's decisions are observed over multiple rounds, providing robust information regarding their performance and ability. Furthermore, the experiments are implemented in identical lab conditions in three very different cultural contexts, improving the external validity of the findings.

[4] An opposite effect is possible if there is "conscience accounting", and individuals who cheated recently experience a sense of guilt that compels them to behave honestly. Evidence for this kind of behavior was found by Madarász, Gneezy and Imas (2012).

3.1 Participants

The experimental sessions were conducted at CESS (Centre for Experimental Social Sciences) laboratories in Oxford, UK, and Santiago, Chile, and the Laboratory for Experimental and Behavioural Economics in Moscow, Russia. In total, there were 1032 subjects (460 in UK, 316 in Chile, and 256 in Russia) in 62 experimental sessions. Subjects were recruited through email announcements; each participant was allowed to participate in only one experimental session. On average, a session lasted 90 minutes, including instructions and payment. The experiment was computerized using ZTREE (Fischbacher, 2007).[5]

The majority of participants were recruited from the University of Oxford in Oxford, the Universidad de Santiago (USACH) in Santiago and the Higher School of Economics (HSE) in Moscow. Oxford and HSE are elite universities, with a large proportion of students from families of high socio-economic status. Students at USACH, on the other hand, are very diverse with many from middle to low socio-economic backgrounds and first family members to attend university. Slightly over half of all subjects were males (51.5% in UK, 49.1% in Chile, and 52% in Russia). The majority of subjects were in their late teens and 20s, with the median age being 22 years in UK and Chile, and 20 years in Russia (see Figure 4 in the Appendix for the distribution of subject age).

3.2 Experimental Design

The experiment followed Duch and Solaz (2016) and had the following parts: 1) A dictator game, followed by 2) two modules of real effort task, 3) a risk aversion test, and 4) a questionnaire that was preceded by a die game in some sessions. Subjects received printed instructions at the beginning of each module, and instructions were read and explained aloud. Subjects received feedback about earnings and payment at the end of the experiment.

Selfish Preferences: In the beginning of the experiment, we measured the general other-regarding preferences of subjects with a standard Dictator Game (Engel, 2011). A subject was asked to allocate an endowment of 1000 ECUs between himself and another randomly

[5] A copy of the instructions can be found in the online replication material.

selected subject in the room. Participants were informed that only half of them will receive the endowment, and the ones who receive the endowment will be randomly paired with those who don't.

Real effort task: Following the dictator game, we conducted a real effort public goods experiment to measure cheating behavior.

This part of the experiment consisted of 20 rounds. Each round began with a real-effort task. A subject had to add two two-digit numbers and record the answer, after which he was given another pair of numbers to add, and so on until one minute expired. A running tally of correct answers was visible on the computer screen. After one minute, the subject was informed about his Preliminary Gains, which were equal to the number of correct additions times a predetermined number of ECUs. After that, subjects were asked to declare their gains. A certain percentage of these Declared Gains was then deducted from their Preliminary Gains; these deductions were then divided evenly among the members of the group. This deduction or tax rate did not vary with the round and was known in advance. Treatments with 10%, 20%, and 30% tax rates were used.[6]

At the beginning of each 10-round module, subjects were informed that there is a probability that Preliminary and Declared gains can be compared and that, if there is a difference, they will be fined 50% of the difference between Preliminary and Declared earnings.[7] Subjects were informed of the exact probability at the beginning of each module. In the first module, this probability invariably was 0%; only the data from this module is used in the study. In the second module, the probability varied between 10 and 100%, depending on the session; we do not use this data in our analysis, as we focus on cheating decisions made when there were no risks of penalties.

Treatments: Besides varying the tax rate, we implemented several different treatments in the RET part of the experiment, designed to identify conditions under which subjects might vary their degree of cheating. In the "Baseline" treatment the earnings of the subjects were strictly tied to their performance, and all subjects received the same payment of 150 ECU per

[6] One experimental session in UK had a 40% tax rate was used.

[7] Each module was also preceded by one a practice round, when subjects completed the real effort task, but did not declare gains.

correct answer to the real effort task.

In the “Status” treatment, subjects did not receive equal salary. In every four-member group, two subjects received 100 ECU per correct answer, and the other two subjects received 200 ECU. The roles were assigned at random at the beginning of each 10-round module, and remained unchanged throughout the 10 rounds.

In the “Shock” treatment, subjects received either 150 ECU (in Chile) or 100 ECU (in Russia and in UK) per correct answer. In every round, each subject had a 50% chance of receiving a bonus payment of 1300 ECU. Subjects were informed about their bonus after they completed the RET task, but before they reported their income. Subjects were presented with a breakdown of their earnings (gains associated with their performance in the RET and the portion associated with the bonus).

Finally, in the “Baseline Non-fixed” treatment, the subjects were randomly reassigned to new groups at the end of each round. The breakdown of experimental sessions by treatment and tax rate is shown in Table 1.

		10% tax		20% tax		30% tax		40% tax	
		Sess	Subj	Sess	Subj	Sess	Subj	Sess	Subj
Baseline	Russia	4	48	4	52	1	16		
Baseline	UK	3	72	3	64	2	44	1	20
Baseline	Chile	1	12	1	12	1	12		
Status	Russia	1	16	1	16	1	16		
Status	UK	1	24	2	28	1	20		
Status	Chile	1	16	1	16	1	16		
Shock	Russia	1	16	1	16	1	16		
Shock	UK	1	16	1	20	1	20		
Shock	Chile	1	16	1	20	1	16		
Non-fixed	Russia	1	16	1	16	1	12		
Non-fixed	UK	5	76	2	28	2	28		
Non-fixed	Chile	4	80	3	52	3	48		
	Total	24	408	21	340	16	264	1	20

Table 1: Summary of Experimental Sessions

Subjective Ability: In “Baseline Non-fixed” treatment we also elicited incentivized subjective assessments of RET ability. After completing the practice round for the RET, but before the first round of each 10-round RET module, subjects were asked to rank, on the 1-4 scale, their RET performance in the following round relative to other players in their groups (with 1 indicating that the subject was expecting to rank first). They were informed that they would earn extra 100 ECUs if their prediction was correct. In two randomly selected rounds (excluding the first round), subjects were similarly asked to rank their RET performance immediately after completing the RET task.

Risk Aversion: Subjects made incentivized decisions in a standard risk aversion test (Holt and Laury, 2002). Participants had to choose between a high risk option A and a low risk option B in 10 different pairs of lotteries. One of these decisions was selected at random for payment.

Questionnaire and die tossing game: At the end of the experiment, participants were asked to answer a short attitudinal and demographic questionnaire. In some sessions[8], a version of the Fischbacher and Follmi-Heusi (2013) die tossing game was implemented prior to the questions. Subjects were asked to toss a die and report the result, without any means for the experimenter to observe the outcome. The participants were told that, after reporting the result, they could toss the die as many times as they wanted as a means to test if the die was fair. The payoff for this part of the experiment was equal to 100 ECU times the number reported.

Payment. Subjects were paid the amount they kept/received in the Dictator Game, plus a randomly selected round from the first RET and decision module, plus one randomly selected round from the second RET and decision module, plus the results of the Risk Aversion Test and the Die treatment, when applied. ECU earnings were converted at the exchange rate of 300 ECUs per £1 in Oxford and 300 ECUs per 500 pesos in Santiago. The exchange rate in Moscow varied between 7 ECU and 9 ECU per Russian rouble to keep the total earnings relatively constant in USD dollars.[9]

[8]The complete list of sessions is found in Table 3 in the appendix.

[9]The exchange rate for Rouble was between 35 and 60 Roubles per USD, depending on when the session took place.

3.3 Variables of interest

Fraction declared. This is our primary dependent variable and a measure of the subject's dishonesty. It is equal to the subject's Declared Gains, divided by her Preliminary Gains.

RET rank. This is our primary measure of subject's ability. To compute this value, we rank all subjects within each country according to the total number of correct answers at the RET task over the first 10 rounds. The value of 1 corresponds to the subject ranking first, and the value of 0 corresponds to the subject ranking last.

RET deviation. This is the deviation of the subject's RET performance in the current round from predicted performance. To obtain the prediction, in each country we regress subject performance on subject and round fixed effects.

DG offer. This is the offer (between 0 and 1000 ECU) made by the subject in the dictator game. We use it as a measure of the subject's other-regarding preferences.

Reported die value. This is the 1-6 value reported by the subject in the die tossing part of the experiment.

Norms. This is an index measuring the subject's tolerance of self-serving but socially undesirable behavior. It is the normalized first principal component from ten survey questions that measure the attitudes toward various forms of opportunistic behavior, such as cheating on taxes, buying stolen goods, or falsely claiming government benefits. The full list of questions, with the corresponding factor loadings, is given in Table 4 in the appendix.

Demographic controls. We control for gender and age of subjects, as well as the country in which the experiment was conducted.

Response time. We measure the response time for the decision to declare gains. This is the time from the moment when the dialog window opens, to the moment the participant enters the declared income and presses the OK button.

Risk preferences. We count the number of low-risk options chosen by the participant in the risk aversion part of the experiment.

Ideology. This is the subject's self-professed ideology on 0-10 scale.[10]

[10]The English version of the survey question was "In politics, people sometimes talk about parties and politicians as being on the left or right. Using the 0 to 10 scale on this card, where the end marked 0 means

4 Experiment results

We proceed to compare the frequency of limited and maximal cheating across the three countries, across different treatments, and across the different performance strata of subjects. We then estimate a reduced-form multinomial choice model (assuming that the participants choose between honesty and limited and maximal cheating). Finally, we test our hypotheses with a structural model assuming that the subjects have utility functions defined by (1).

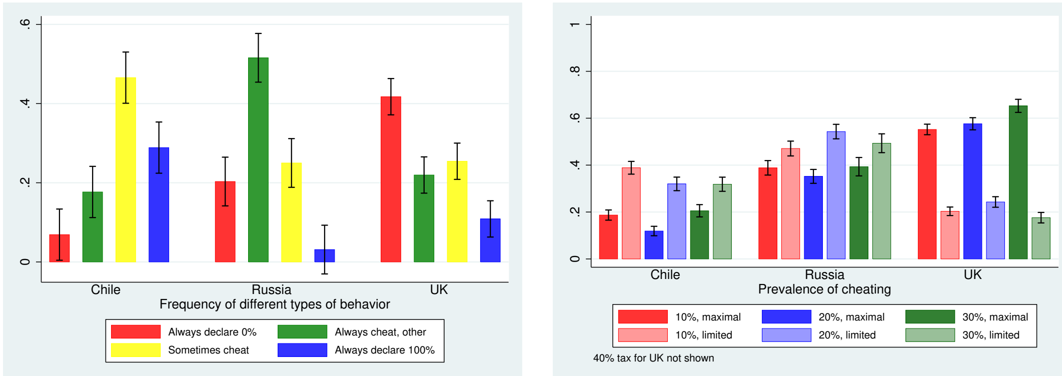
4.1 Cross-country patterns of cheating and ability in the population

Cheating is prevalent in Russia and the UK, with participants misrepresenting the amount earned in 88% and 79.4% of the decisions being made, respectively. Cheating levels are systematically lower in Chile, with either maximal or limited cheating present in 51.7% of observations.

The heterogeneity of cheating behavior across the three countries is captured by Figure 1(a), which shows the distribution of people who cheat maximally in every decision that they make, and "Always Cheat", but do not always maximize their earnings. There are also people who "Sometimes cheat", but were honest on at least one occasion, and people who "Always declare 100%" of the income earned in the RET. The highest proportion of maximal cheaters are in the UK, where cheating maximally in every round is the most common behavior. In Russia, 71.9% of the participants never made a honest declaration in any of the 10 rounds (compared with 63.7% of UK participants), but the predominant conduct was is to cheat without maximizing earnings. These results highlight the heterogeneity of cheating behavior across Russia and the UK, despite similarities in the percent of income evaded, suggesting differences in self-deceptive behavior or costs of cheating in the populations. Cross-cultural variations are further implied by the Chilean data, where a large majority of participants cheated in some rounds, and behaved honestly in others (45.9%). Participants in Chile appeared to be less willing to maximize profits despite the absence of any monetary costs of cheating.

Figure 1(b) shows the likelihood that income is misrepresented, in different countries and across different tax rates. An increase of tax rate from 20% to 30% will increase maximal

left and the end marked 10 means right, where would you place yourself on this scale?"



(a) Types of participants.

(b) Cheating by tax rate.

Figure 1: Prevalence of cheating behavior by country

cheating; the difference is significant for Chile and UK (with $p < 0.00001$ and $p = 0.00009$, respectively), and is marginally significant for Russia ($p = 0.09924$). At the same time, an increase of tax rate from 10% to 20% will lead to a lower level of maximal cheating in Chile ($p < 0.00001$), and has a negative but marginally significant effect in Russia as well ($p = 0.0943$). [11]

In Figures 5(a) and 5(b) in Appendix, we look at the effect of inequality and windfall income on cheating. In the Status treatment, receiving 100 ECU per addition, compared with 200 ECU, induces more maximal cheating in Chile and UK ($p = 0.00092$ and $p = 0.00026$), and more limited cheating in Russia ($p = 0.02875$). In the Shock treatment, windwall profits have no effect on maximal cheating, and a negative effect on limited cheating in UK ($p = 0.02214$).

We next look at the relationship between cheating and participant performance. Previously, Duch and Solaz (2016) identified a strong positive association between performance on the RET and the likelihood to cheat, using UK data. In this work, we differentiate between limited and maximal cheating, to see that the result of Duch and Solaz (2016) was driven entirely by the higher likelihood of maximal cheating among participants with high RET performance. We find a similar pattern in Russia and Chile as well.

On Figure 2, we show the prevalence of maximal and limited cheating among participants

[11]Moving from 10% to 20% tax reduces limited cheating in Chile ($p = 0.00071$) and increases in in Russia and UK ($p = 0.00141$ and ($p = 0.00725$). Increasing tax rate further to 30% has no effect on limited cheating in Chile, and redices it in Russia and UK ($p = 0.0547$ and $p = 0.00004$).

with average RET performance above and below their national median levels — the "high performers" and "low performers" (we pool data from all treatments and tax rates). We further consider a subset of limited cheating — the declarations between 1 and 100 ECU, referred to as "near-maximal" cheating.

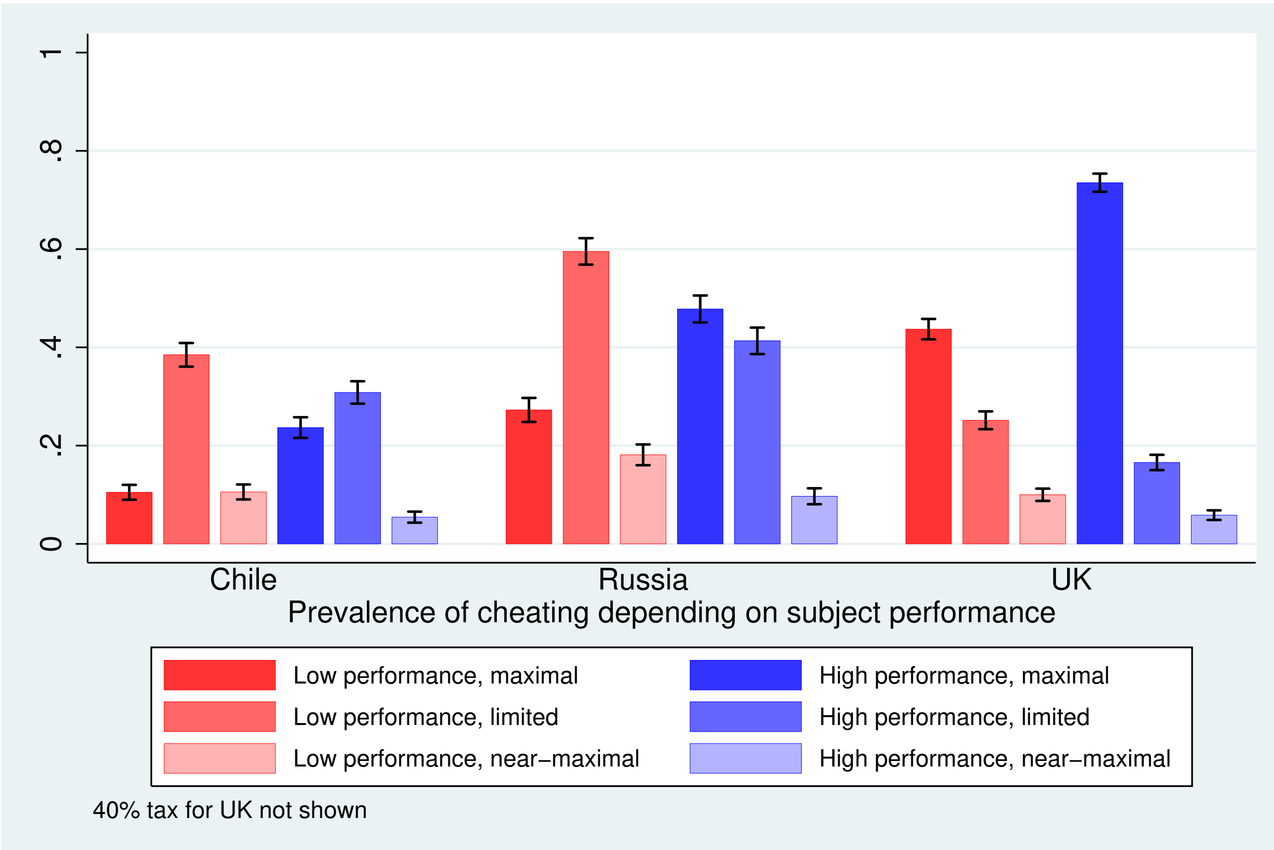


Figure 2: Prevalence of cheating depending on subject performance

In all three countries, high performers were much more likely to cheat maximally. In particular, in Chile high performers were more than twice as likely to cheat maximally, compared to low performers (23.6% versus 10.5% of all decisions), with comparable differences in Russia (47.8% versus 27.2% of all decisions) and the UK (73.1% versus 43.2%). At the same time, both limited and near-maximal cheating were much more prevalent among the low performers (in all cases the differences were significant at $p < 0.00001$). In Table 5 in the Appendix, for different definitions of near-maximal cheating (such as 1-90 ECU, 1-80 ECU, all the way down to 1 ECU) we compare the fraction of such declarations made by high performers and low performers, and report the p value for the two-tailed difference of means test. We find that, for almost all definitions of near-maximal cheating, high performers are less likely to engage in it than low performers. In particular, in Russia 1 ECU was declared on 45 occasions, 33 of them by low performers — a difference significant at $p = 0.018$.

In Figures 6(a), 6(b) we compare the frequency of limited and maximal cheating among males and females, for participants with performance above and below the national medians. We find that maximal cheating was more common among males. In Russia, the difference was significant at $p = 0.0299$ for high-performing participants, and at $p = 0.00002$ for low-performing ones; in Chile and the UK, the difference was always significant at $p < 0.00001$. On the contrary, limited cheating was more prevalent among females; in Russia and UK, the difference was significant at $p < 0.00001$ for both high- and low-performing participants.

These findings are corroborated by the analysis of a reduced-form multinomial choice model. We assume that in each round, each subject faces three choices: to declare 0% of her income, to declare 100%, and to declare some intermediate amount. In Table 6 in the Appendix, we estimate this model for the combined dataset, as well as for each country separately. We find that, across all three countries, participants who perform better at the real effort task are more likely to declare 0%. At the same time, a participant's performance in the current round does not have a significant effect on her decision. The effect of participant RET rank and performance on declaring between 1 and 99% of income is significant only for the combined sample, and higher-ranked subjects are actually less likely to engage in limited cheating.

Potentially, an individual's desire to declare income and be taxed can be driven by altruism, as three quarters of the tax collected from an individual is redistributed to three other group members. In order to control for altruism, we include in the regression the amount that the individual has donated in the dictator game. Predictably, individuals who donated more are less likely to cheat maximally, and more likely to behave honestly. For the combined sample, an individual who donated 500 ECU is 30.5% less likely to declare 0%, and is 20.7% more likely to declare 100%, compared to someone who donated 0 ECU. The effect of DG donations on limited cheating is positive and significant in Russia and UK, and is negative but insignificant in Chile.

The effect of tax rate on the likelihood of maximal lying is not monotonic. Participants are more likely to report 0% if they face 30% tax rate, compared with those facing 20% tax. The difference is positive for all countries, significant at $p = 0.0257$ for the combined sample and at $p = 0.0273$ for Chile, and is marginally significant for UK at $p = 0.0886$. However, there are no significant differences between participants facing 10% and 30% tax. Other experimental controls appear to have no effect on the likelihood of maximal and limited cheating.

Table 7 includes additional individual-level covariates, as well as controls for the choice made in the previous round. Subject strategies are path-dependent, and if a subject has chosen to declare 0% in the previous round, he is more likely to make a zero declaration in the current round. Having maximally cheated in the previous round reduced the probability of honest behavior in the current round by 29.0%. The effect of limited cheating in the previous round depended on how much income was declared, with low declarations more likely to lead to maximal cheating in the following round.

Social norms have a significant effect on dishonesty. Participants who professed less tolerance for opportunistic behavior were slightly less likely to cheat maximally. An increase of 1 standard deviation in the norms index was associated with a 0.86% smaller likelihood of maximal cheating; the coefficient was significant for Chile and marginally significant for Russia. The effect of observing other group members declare income in the previous round was also present in Chile and UK, as well as in the combined sample. Every 1000 ECU declared by other group members in the previous round reduced the likelihood of a 0% declaration by 1.01%. Risk preferences, trust, and ideological self-placement were largely not related to dishonest behavior.

In UK and Chile, as well as in the combined sample, higher household income were associated with higher likelihood of maximal cheating. In Chile, a person from the country's highest income bracket was 4.66% more likely to have cheated maximally, compared with a person from the lowest income bracket. The corresponding difference for the UK was 3.33%.

In Table 8 we estimate the model for the first round only, as well as conditional on the choice made in the previous round. We find that, in the first round, higher performing participants are more likely to lie maximally, with the difference being 25.4% between the highest and lowest performing participant in the country. Likewise, a highest performer is 16.1% less likely to behave honestly. Higher performing subjects are also more likely to declare 0% conditional on having declared an amount above 0%, and less likely to declare 100% conditional on having declared 0%.

Table 8 also gives a more detailed look of the effect of tax rate on maximal cheating. Previously, we found that participants in the 30% tax treatment are generally more likely to lie maximally compared to their counterparts in the 20% treatment. It turns out that this difference is significant (at $p = 0.0098$) only if the participant has declared between 1 and 99% of her income in the previous period.

4.2 The effect of ability on the cost of cheating and on self-deception

We assume that individuals have utility functions of type (1), and proceed to estimate the effects of countries and individual covariates on individual choice. In our experiment with groups of four subjects, the utility for individual i will be

$$U_i = y_i(1 - f_i t) + \frac{t}{4} y_i f_i + \frac{t}{4} \sum_{j \neq i} y_j f_j - C(f_i, y). \tag{3}$$

Here, the sum represents the transfer that the individual receives from other members of his group.

We assume that the marginal cost of cheating is determined as follows:

$$\bar{c}_i = \lambda_{i1} \exp(\alpha_1 + \beta_1 X_i), \tag{4}$$

where X_i is a vector of individual covariates and λ_i is an exponentially distributed random variable whose value is known by the individual but not by the outside observer. The values α_1 and β_1 are parameters that determine the distribution of the marginal cost of cheating for a person with a given X_i.

Hence, the marginal cost of cheating is always positive. Denote by

$$P_{1i} = P(\bar{c}_i < 0.75t) = 1 - \exp(-0.75t \exp(-\alpha_1 - \beta_1 X_i)) \tag{5}$$

the probability that the marginal cost of cheating is smaller than $0.75t$, which is the monetary benefit incurred for each ECU of income that is not declared. With this probability, the individual will declare zero income.

The individual's self-deception threshold is known by the individual, but not by the outside observer. Let

$$P_{2i} = \frac{1}{1 + \exp(-\alpha_2 - \beta_2 X_i)}, \tag{6}$$

be the probability that the individual's threshold is smaller than 1 and the individual is capable of self-deceptive behavior. With probability $1 - P_{2i}$ we have $\bar{f}_i = 1$, so no self-deception is possible. The values α_2 and β_2 are therefore the parameters that determine how likely a person with a given X_i is to engage in self-deceptive behavior, conditional on the marginal cost of cheating being high enough.

If $\bar{f}_i < 1$, the self-deception threshold is drawn from a Beta distribution with the first parameter $a_i = \exp(\alpha_3 + \beta_3 X_i)$ and the second parameter $b = 1$. The expected value of $\bar{f}_i$ will be equal to $\frac{a_i}{a_i+1}$, so higher values of a_i imply self-deception of a smaller magnitude. The value of $\bar{f}_i$ is realized independently from λ_i. The values α_3 and β_3 determine the magnitude of self-deceptive behavior for a person with a given X_i, conditional on $\bar{f}_i < 1$ and the marginal cost of cheating being high enough.

Our goal is to estimate the parameters $(\alpha_1, \alpha_2, \alpha_3, \beta_1, \beta_2, \beta_3)$ from the observed experimental data. We proceed by constructing the likelihood function. An individual will declare zero income if and only if the marginal cost of cheating $\bar{c}_i$ is less than $0.75t$, which happens with probability P_{1i}. If $f_i = 1$, we should also have $\bar{c}_i \geq 0.75t$. Finally, when $f_i \in (0, 1)$, we should have $\bar{c}_i \geq 0.75t$, and the individual must be capable of self-deception. This gives us the following value of the likelihood function for individual i:

$$L(f_i, X_i|\alpha_1, \beta_1, \alpha_2, \beta_2, \alpha_3, \beta_3) = \begin{cases} P_{1i}, & f_i = 0, \\ (1 - P_{1i})P_{2i}\beta(f_i, \exp(\alpha_3 + \beta_3 X_i), 1), & f_i \in (0, 1), \\ (1 - P_{1i})(1 - P_{2i}), & f_i = 1, \end{cases} \quad (7)$$

where $\beta(f, a, b)$ is the density of Beta distribution with parameters a and b.

We estimate the model (1), (7) for the three countries separately, and for the combined dataset. We control for gender, age, country effects, and RET ability, and whether the previous declaration was 0% or in the 1-99% range. Our estimation results are reported on Table 2.[12]

We find that in all three countries, as well as in the combined dataset, individuals with higher average RET performance have lower marginal costs of cheating and, hence, are more likely to declare zero income. This effect is significant controlling for the deviation of one's performance this round from the individual's average performance over all 10 rounds.

At the same time, there is no correlation between ability and the magnitude of self-deceptive behavior. A positive and significant relationship between ability and likelihood of self-deception is found only for the UK.

The country effects are significant. Conditional on other variables, the marginal cost of cheating is highest in Chile and lowest in the UK. Subjects from Russia are more likely than their UK or Chile counterparts to engage in self-deceptive behavior and declare more than 0% but less than 100% of their income. At the same time, the magnitude of self-deception is highest in the UK, and approximately equal in Russia and in Chile.

In Tables 9-10 in the Appendix we impose additional individual controls. As before, participants with higher RET ranks have lower marginal costs of cheating (although in Chile, this relationship is marginally significant at $p = 0.069$). Social norms are not correlated with either marginal costs of cheating, or the probability and likelihood of self-deception. In Chile and the UK, as well as the combined sample, marginal costs of cheating are lower for individuals with higher family income. At the same time, income has no effect on the likelihood of limited

[12]We also include a dummy variable for first round, the number of round, and treatment controls. The corresponding coefficients are not shown in the table.

	Chile		Russia		UK		All	
Marginal_cost								
RET rank	-1.715***	(-3.36)	-0.706*	(-2.14)	-1.123***	(-4.96)	-1.104***	(-6.41)
RET deviation	0.0158	(0.94)	-0.00267	(-0.20)	0.00178	(0.22)	0.00355	(0.57)
Male	-0.491	(-1.66)	-0.188	(-1.00)	-0.398**	(-3.23)	-0.353***	(-3.65)
Age	-0.0179	(-0.96)	0.0792	(1.35)	0.0375**	(3.03)	0.0310**	(2.91)
OfferDG	0.00231**	(2.92)	0.00299***	(5.21)	0.00256***	(8.23)	0.00260***	(10.15)
Russia							-0.596***	(-3.83)
Oxford							-1.385***	(-9.92)
Constant	1.169	(1.39)	-3.462**	(-2.95)	-2.877***	(-8.14)	-1.432***	(-4.54)
Self_dec_prob								
RET rank	-0.204	(-0.50)	0.567	(0.81)	1.390**	(2.93)	0.265	(1.01)
RET deviation	0.0151	(0.90)	0.0846*	(2.54)	0.0160	(0.76)	0.0265*	(2.21)
Male	0.0152	(0.07)	-1.395***	(-3.65)	-0.830**	(-3.18)	-0.475**	(-3.14)
Age	-0.0242	(-1.26)	0.0306	(0.69)	0.00597	(0.31)	-0.00518	(-0.42)
OfferDG	-0.00156*	(-2.32)	-0.000491	(-0.54)	-0.00230**	(-3.16)	-0.00153***	(-3.55)
Russia							1.590***	(7.46)
Oxford							0.243	(1.43)
Constant	1.343	(1.89)	1.876	(1.93)	0.139	(0.21)	0.706	(1.64)
Self_dec_threshold								
RET rank	-0.292	(-1.13)	0.258	(1.20)	0.0587	(0.23)	-0.0253	(-0.19)
RET deviation	0.0326	(1.81)	-0.00553	(-0.43)	-0.00644	(-0.50)	0.00240	(0.29)
Male	0.154	(1.09)	0.0261	(0.23)	-0.0981	(-0.68)	0.0213	(0.28)
Age	0.0166	(1.35)	0.000321	(0.03)	0.00539	(0.59)	0.00425	(0.63)
OfferDG	0.000655	(1.61)	0.000648*	(2.34)	0.000516	(1.43)	0.000616**	(3.19)
Russia							-0.155	(-1.67)
Oxford							-0.377***	(-3.70)
Constant	-0.999*	(-2.43)	-0.595*	(-2.08)	-1.191***	(-3.80)	-0.570**	(-2.78)
Observations	3158		2560		4600		10318	

Clustered SE, z-scores in parenthesis, treatment and time controls not shown
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2: Estimation of the structural model

cheating (although in the UK, income is positively correlated with the magnitude of limited cheating). Ideology and risk preferences are not significant.

The marginal cost of cheating is much smaller if the subject has cheated in the previous round, especially if the subject has declared 0% of his income. This is what we would expect if the subjects had reputation concerns; after the subject demonstrates to the experimenter that he has cheated, cheating becomes much less costly. At the same time, both the likelihood and magnitude of self-deceptive behavior is positively affected by past cheating.

The marginal cost of cheating is significantly higher for 20% and 30% tax rates, compared to a tax rate of 10%. However, differences between 20% and 30% tax rates are not significant for any country (although they are significant at $p = 0.0209$ for the combined dataset).

This may indicate the presence of altruistic concerns: Higher tax rates imply less income transferred to other group members per each ECU in income that is not declared. Other experimental conditions (status and non-fixed treatments and windfall income) are not significant almost anywhere. Finally, one's behavior in the dictator game has a predictable effect on cheating. Individuals who made larger donations also have a higher marginal cost of cheating and are less likely to be able to self-deceive. The social norms index was not found to be significant.

In Table 11 we further examine the effect of past behavior on marginal cost of cheating and on self-deception. In the first model, we only consider the choices that the subjects make in the first round[13]. Importantly, the individual's RET rank, calculated over all 10 rounds, is a predictor of marginal cost in Round 1, while that round's deviation from average RET performance is not. This again supports the hypothesis that ability is positively related to cheating. In the other three models we consider the effects of past choices, lagged one, two, or four times. Past behavior is a significant predictor of future actions. All effects found for first lags in Table 2 are also significant for second lags, almost all are significant for third lags, and some are significant for fourth lags as well. As more of past behavior is taken into account, ability becomes a less significant predictor of behavior. Individual's RET rank has a significant and negative effect on the marginal cost of cheating if one lag is considered. For two lags, however, this effect is only marginally significant at $p = 0.055$, and is not significant if four lags are taken into account. It appears that the effect of ability on cheating largely takes place in the earlier rounds, and, as the experiment progresses, the choices of individuals become increasingly dependent on past decisions.

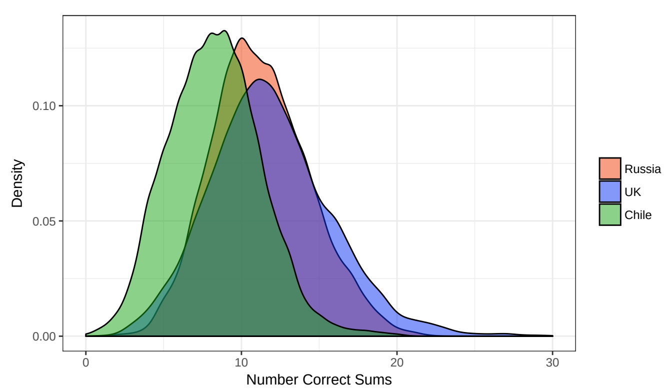
Finally, we investigate whether individuals can be classified into several discrete types based on their preferences for cheating, or if individual preferences for cheating are heterogeneous. For each of the three countries, we estimate the model used in Tables 9-10 in the Appendix. In addition, we include second to third powers of RET rank, dictator game offer, social norms index, and their interaction terms. We then calculate $\hat{\alpha}_1 + \hat{\beta}_1 X$, which is the logarithm of the deterministic part of the marginal cost of cheating $\bar{c}$, assuming baseline treatment and a tax rate of 20%. Figure 7 in the Appendix plots, for round 1, the empirical distribution of this value for each of the three countries. Each of these distributions is close to unimodal. We formally test for unimodality using the Hartigan dip test (Hartigan and Hartigan, 1985); for each distribution, we fail to reject the null hypothesis of unimodality (with $p = 0.9981$,

[13]Country, age, and gender effects are not shown on the table.

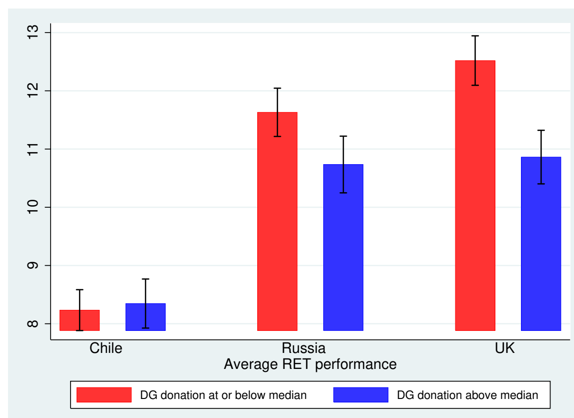
$p = 0.2820$, and $p = 0.9308$ for Chile, Russia, and UK).

5 RET performance

Here, we look at the determinants of participant RET performance. We make two findings. First, in Russia and the UK, RET performance is negatively associated with dictator game donations made at the previous stage of the experiment. This is consistent with the broad hypothesis that ability is negatively associated with prosocial behavior. Second, RET performance is largely independent of experimental conditions, including the tax rate. The fact that effort at the real effort task is supplied inelastically makes is possible to assume that income y in the utility function (1) is exogenous.



(a) Distribution by country



(b) Average performance by DG donations

Figure 3: RET performance

Figure 3(a) presents the density of performance on the RET, number of correct sums, by country. As can be seen, the UK and Russia present fairly similar distributions, with a median of 12 and 11 answers, respectively. In Chile, the performance was slightly lower, with a median of 9 correct answers.

Figure 3(b) shows the average RET performance in each country, depending on how much the participants donated in the dictator game at the beginning of the experiment. In the UK and Russia, participants who donated at or below the country median (300 ECU in either country) performed better than those who donated above the country median. In Russia, the difference between the two groups constituted 0.9 questions (significant at $p = 0.0063$ under two-tailed difference of means test). In the UK, the difference was even larger (1.66 questions, significant at $p < 0.000001$). In Chile, the participants who donated at or above the country median of 450 ECU performed slightly better, but the difference was not significant (0.11 questions, $p = 0.68$).

We proceed to regress the individuals' RET rank on their donations in the dictator game as well as other experimental and individual-level covariates. The estimation results are in Table 12 in the appendix. In all countries except Chile, the dictator game donations are negatively associated with the subsequent RET performance. Male subjects rank significantly higher in every country. We also looked at potential impact of the different aspects of the experimental design (tax rate and treatments: shock, non-fixed, or status) and found no impact on ranking. Out of 20 coefficients for in models 1-4, only 3 are significant and contradictory: the subjects in non-fixed sessions performed better in Chile and Russia, but performed worse in the UK. In models 5-8 we include trust, left-right ideological self-placement, and social norms index; they largely have no significant effect on an individual's RET rank. The tax rate also has no effect on subject performance.

In Table 13 in the Appendix, we regress individual performance in each round on all covariates of the previous table (this time, there are two dummy variables for the Shock treatment, corresponding to the subject receiving and not receiving the income shock in that round). As one could expect, performance improves with time, with subjects making, on average, between **0.12 and 0.205** extra successful additions in each subsequent round. Non-fixed treatment, once again, had positive effect on performance in Russia and Chile, and had negative effect in the UK. Otherwise, experimental conditions are not associated with RET performance. In Table 14 in the appendix, we control for individual fixed effects and find that performance is not correlated with the share of income declared in the previous round by the individual or with the total income declared by other group members in the previous round. In Models 5-8 of the table, we instead use the data from the the second 10-round module of the real effort task; we find that being audited has a small, negative, but insignificant effect on subject performance in the subsequent round.

6 Discussion

We study cheating behavior with a computerized experiment involving 1032 subjects in three different countries. We find that most people consistently follow one of three heuristics or strategies: Maximal cheating (misrepresenting information to maximize personal gain), limited cheating (not fully exploiting the opportunity to lie), and honest behavior.

The distribution of these repertoires can vary quite significantly across contexts or populations. However, we can say something about the characteristics of individuals who choose different heuristics. In particular, individual ability is positively correlated with maximal cheating, and negatively correlated with limited cheating and honest behavior. These findings are robust across the countries.

Our findings are verified with different games (public goods game and die tossing game). Limited cheating involves a much greater response time than either maximal cheating or honesty, which signifies it as distinct behavior.

A big question is whether cheating behavior will respond to changes in incentives. This will not be the case under a strict type-based model (when observed heuristics correspond to actual behavioral types). We do not find this to be the case. For one thing, maximal cheating responds to costs (there is more maxdimal cheating under 30% than under 20% tax rate). We further examine this question by proposing a simple utility function to explain observed behavior. We estimate the structural model using this function. We find that the empirical distribution of marginal cost, predicted from individual characteristics (as well as DG behavior), is unimodal, which does not support the type-based hypothesis.

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Appendix A. Tables and figures.

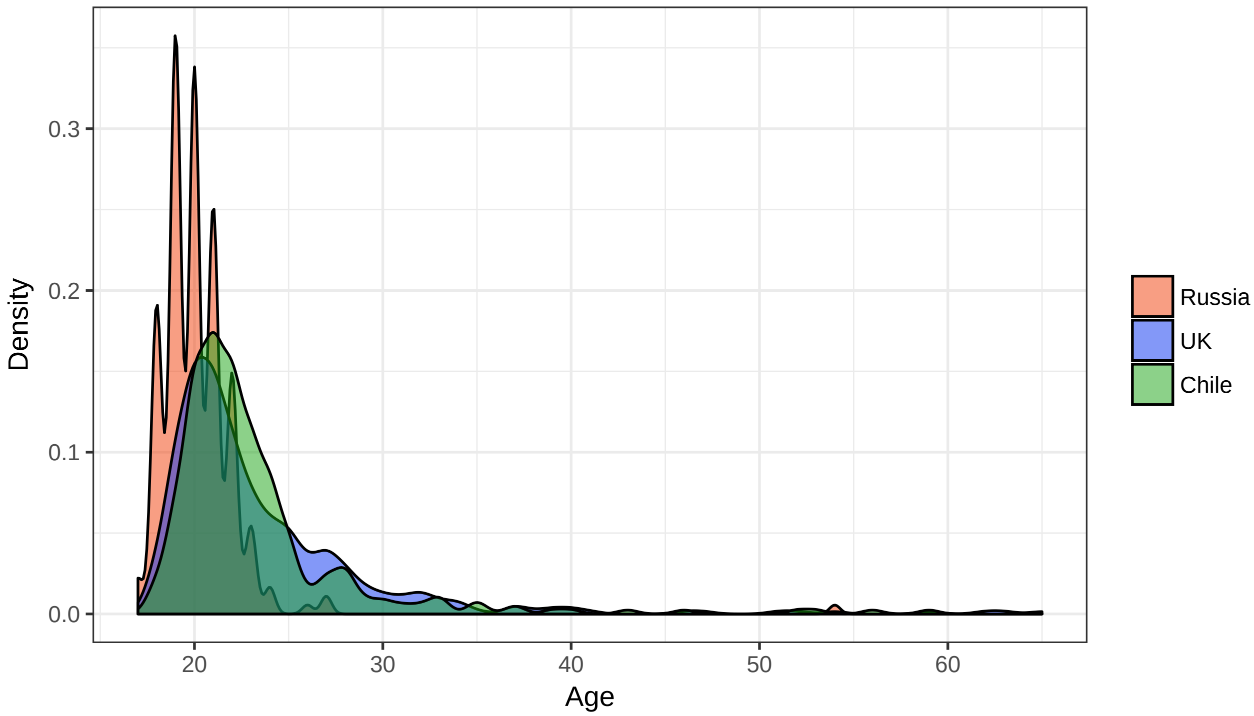


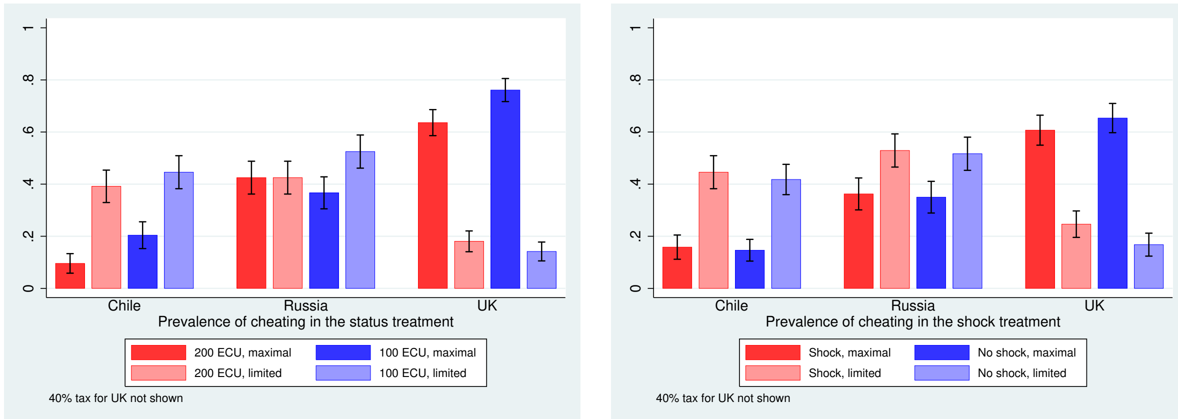
Figure 4: Distribution of subject age

Avoid paying a fee on public transport	0.328
Cheating on taxes if you have a chance	0.371
Driving faster then the speed limit	0.225
Keeping money you found on the street	0.266
Lying in your own interests	0.313
Not reporting accidental damage you have done to a parked car	0.331
Throwing away litter in a public place	0.297
Driving under the influence of alcohol	0.304
Making up a job application	0.331
Buying something you know is stolen	0.373

Table 4: Components of the social norms index; first component explains 28% of variation.

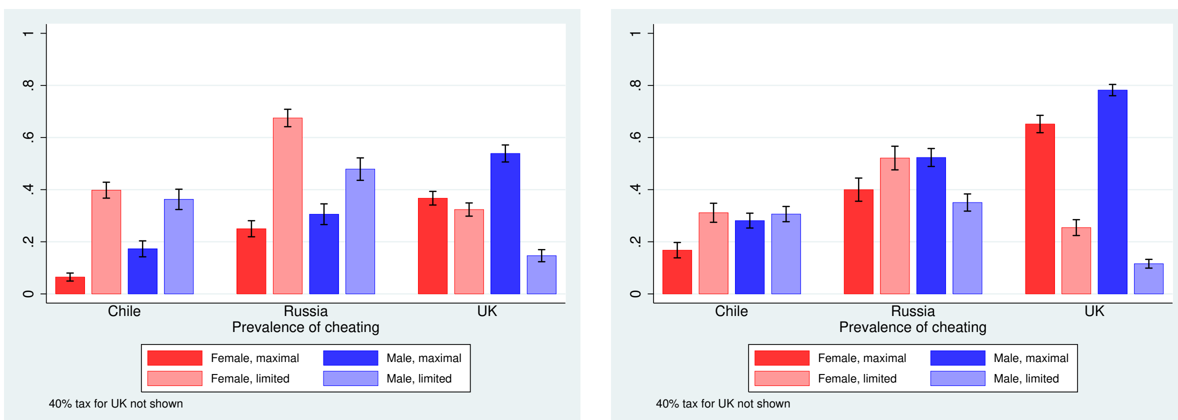
#	Country	Treatment	Tax rate	Subjects	Risk	Die	Note
1	UK	Baseline	10	24	Yes	No	
2	UK	Baseline	20	24	Yes	No	
3	UK	Baseline	30	24	Yes	No	
4	UK	Status	10	24	Yes	No	
5	UK	Status	20	12	Yes	No	
6	UK	Status	20	16	Yes	No	
7	UK	Status	30	20	Yes	No	
8	UK	Baseline	10	24	Yes	No	
9	UK	Baseline	20	20	Yes	No	
10	UK	Baseline	30	20	Yes	No	
11	UK	Baseline	40	20	Yes	No	
12	UK	Baseline	10	24	Yes	No	
13	UK	Baseline	20	20	Yes	No	
14	UK	Shock	10	16	Yes	No	100 ECU per answer+1300 ECU bonus
15	UK	Shock	20	20	Yes	No	100 ECU per answer+1300 ECU bonus
16	UK	Shock	30	20	Yes	No	100 ECU per answer+1300 ECU bonus
17	Chile	Shock	10	16	Yes	No	150 ECU per answer+1300 ECU bonus
18	Chile	Shock	20	20	Yes	No	150 ECU per answer+1300 ECU bonus
19	Chile	Shock	30	16	Yes	No	150 ECU per answer+1300 ECU bonus
20	Chile	Status	10	16	Yes	No	
21	Chile	Status	20	16	Yes	No	
22	Chile	Status	30	16	Yes	No	
23	Chile	Baseline	10	12	Yes	No	
24	Chile	Baseline	20	12	Yes	No	
25	Chile	Baseline	30	12	Yes	No	
26	UK	Non-fixed	10	16	Yes	Yes	
27	UK	Non-fixed	10	16	Yes	Yes	
28	UK	Non-fixed	10	16	Yes	Yes	
29	UK	Non-fixed	10	12	Yes	Yes	
30	UK	Non-fixed	20	12	Yes	Yes	
31	UK	Non-fixed	30	16	Yes	Yes	
32	Chile	Non-fixed	10	20	Yes	Yes	
33	Chile	Non-fixed	20	20	Yes	Yes	
34	Chile	Non-fixed	30	20	Yes	Yes	
35	Chile	Non-fixed	10	16	Yes	Yes	
36	Chile	Non-fixed	20	12	Yes	Yes	
37	Chile	Non-fixed	30	8	Yes	Yes	
38	UK	Non-fixed	10	16	Yes	Yes	
39	UK	Non-fixed	20	16	Yes	Yes	
40	UK	Non-fixed	30	12	Yes	Yes	
41	Russia	Baseline	10	8	Yes	No	
42	Russia	Baseline	10	8	Yes	No	
43	Russia	Baseline	10	16	Yes	No	
44	Russia	Baseline	10	16	Yes	No	
45	Russia	Baseline	20	16	Yes	No	
46	Russia	Baseline	20	16	Yes	No	
47	Russia	Baseline	20	8	Yes	No	
48	Russia	Baseline	20	12	Yes	No	
49	Russia	Shock	10	16	Yes	Yes	100 ECU per answer+1300 ECU bonus
50	Russia	Shock	20	16	Yes	Yes	100 ECU per answer+1300 ECU bonus
51	Russia	Status	10	16	Yes	Yes	
52	Russia	Status	20	16	Yes	Yes	
53	Russia	Status	30	16	Yes	Yes	
54	Russia	Baseline	30	16	Yes	Yes	
55	Russia	Shock	30	16	Yes	Yes	100 ECU per answer+1300 ECU bonus
56	Russia	Non-fixed	10	16	Yes	Yes	
57	Russia	Non-fixed	20	16	Yes	Yes	
58	Russia	Non-fixed	30	12	Yes	Yes	
59	Chile	Non-fixed	10	20	Yes	Yes	
60	Chile	Non-fixed	10	24	Yes	Yes	
61	Chile	Non-fixed	20	20	Yes	Yes	
62	Chile	Non-fixed	30	20	Yes	Yes	

Table 3: List of sessions



(a) Cheating in status treatments (b) Cheating in shock treatments.

Figure 5: Prevalence of cheating in shock and status treatments



(a) Low performance (b) High performance

Figure 6: Cheating by gender

		1-1ECU	1-10ECU	1-20ECU	1-30ECU	1-40ECU	1-50ECU	1-60ECU	1-70ECU	1-80ECU	1-90ECU
	Low	0.013291	0.029114	0.033544	0.041139	0.044937	0.060759	0.069620	0.069620	0.073418	0.075316
Chile	High	0.006962	0.023418	0.024051	0.025316	0.025949	0.032911	0.033544	0.034177	0.036709	0.037975
	p	0.075742	0.317002	0.110754	0.013133	0.003914	0.000213	0.000005	0.000007	0.000006	0.000006
	Low	0.014844	0.063281	0.078906	0.082812	0.084375	0.115625	0.120313	0.121875	0.123438	0.126562
Russia	High	0.005469	0.027344	0.031250	0.032031	0.032031	0.049219	0.049219	0.049219	0.049219	0.049219
	p	0.018076	0.000013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
	Low	0.008696	0.036957	0.050870	0.057391	0.059130	0.072174	0.072609	0.073043	0.073913	0.075217
UK	High	0.007826	0.025652	0.033913	0.037826	0.040435	0.043913	0.044348	0.044348	0.044783	0.044783
	p	0.744663	0.027759	0.004330	0.001840	0.003568	0.000042	0.000044	0.000035	0.000029	0.000014

Table 5: Near-maximal cheating depending on performance

	All					
	0%		Intermediate		100%	
RET rank	0.289***	(7.31)	-0.117**	(-2.83)	-0.172***	(-4.32)
RET deviation	-0.00143	(-0.95)	0.00410*	(2.25)	-0.00267	(-1.70)
Male	0.0807***	(3.61)	-0.104***	(-4.52)	0.0236	(1.06)
Age	-0.00647**	(-2.85)	0.00343	(1.57)	0.00304	(1.59)
First period	-0.0602***	(-5.95)	0.0141	(1.23)	0.0461***	(4.42)
Additional period	0.0133***	(9.90)	-0.00926***	(-6.08)	-0.00407**	(-3.14)
OfferDG	-0.000605***	(-11.67)	0.000190***	(3.62)	0.000415***	(7.60)
Tax 20%	-0.0420	(-1.61)	0.0168	(0.63)	0.0252	(1.02)
Tax 30%	0.0209	(0.74)	-0.0232	(-0.81)	0.00226	(0.08)
Tax 40%	0.0218	(0.27)	0.0405	(0.49)	-0.0623	(-0.73)
Shock, yes	-0.0103	(-0.28)	0.0463	(1.18)	-0.0359	(-0.97)
Shock, no	0.00324	(0.09)	0.00579	(0.16)	-0.00903	(-0.24)
Status, 200 ECU	-0.0257	(-0.59)	-0.0131	(-0.29)	0.0388	(0.87)
Status, 100 ECU	0.0557	(1.35)	0.0165	(0.36)	-0.0722	(-1.58)
Non-fixed	0.0233	(0.83)	-0.0439	(-1.46)	0.0206	(0.74)
Russia	0.136***	(4.11)	0.133***	(4.29)	-0.269***	(-8.41)
Oxford	0.297***	(11.30)	-0.143***	(-5.02)	-0.154***	(-6.75)
Observations	10318		10318		10318	

	Chile					
	0%		Intermediate		100%	
RET rank	0.245***	(3.49)	-0.149	(-1.90)	-0.0956	(-1.10)
RET deviation	-0.00219	(-0.92)	0.00392	(1.11)	-0.00173	(-0.50)
Male	0.0680	(1.73)	-0.0245	(-0.52)	-0.0435	(-0.87)
Age	0.00223	(0.79)	-0.00650	(-1.60)	0.00427	(0.90)
First period	-0.0615**	(-3.28)	-0.0517*	(-1.98)	0.113***	(4.45)
Additional period	0.00638***	(3.47)	-0.00281	(-0.99)	-0.00357	(-1.26)
OfferDG	-0.000315**	(-2.90)	-0.000148	(-1.26)	0.000462***	(3.31)
Tax 20%	-0.0737	(-1.66)	-0.0844	(-1.61)	0.158**	(2.89)
Tax 30%	0.0244	(0.60)	-0.0922	(-1.82)	0.0678	(1.21)
Shock, yes	0.136	(1.50)	0.0357	(0.42)	-0.171	(-1.81)
Shock, no	0.134	(1.50)	0.0178	(0.21)	-0.152	(-1.64)
Status, 200 ECU	0.0781	(0.70)	-0.0414	(-0.40)	-0.0367	(-0.34)
Status, 100 ECU	0.148	(1.51)	0.0356	(0.36)	-0.183	(-1.63)
Non-fixed	0.181*	(2.07)	-0.137	(-1.84)	-0.0440	(-0.55)
Observations	3158		3158		3158	

	Russia					
	0%		Intermediate		100%	
RET rank	0.184*	(2.29)	-0.0976	(-1.15)	-0.0864	(-1.34)
RET deviation	0.000530	(0.15)	0.00739	(1.95)	-0.00792**	(-2.69)
Male	0.0584	(1.26)	-0.170***	(-3.74)	0.111**	(3.13)
Age	-0.0203	(-1.39)	0.0181	(1.48)	0.00224	(0.44)
First period	-0.0328	(-1.34)	0.0625*	(2.52)	-0.0296	(-1.30)
Additional period	0.0170***	(5.80)	-0.0195***	(-6.40)	0.00247	(1.30)
OfferDG	-0.000720***	(-6.09)	0.000544***	(4.75)	0.000176*	(2.37)
Tax 20%	-0.0699	(-1.33)	0.104	(1.94)	-0.0344	(-0.95)
Tax 30%	-0.00335	(-0.05)	0.0428	(0.66)	-0.0395	(-0.90)
Shock, yes	-0.0297	(-0.44)	-0.000664	(-0.01)	0.0303	(0.61)
Shock, no	-0.0200	(-0.28)	-0.0265	(-0.38)	0.0465	(0.93)
Status, 200 ECU	-0.0104	(-0.14)	-0.0703	(-0.85)	0.0806	(1.30)
Status, 100 ECU	-0.0311	(-0.34)	-0.0199	(-0.21)	0.0509	(0.91)
Non-fixed	0.0250	(0.37)	-0.104	(-1.57)	0.0790	(1.95)
Observations	2560		2560		2560	

	UK					
	0%		Intermediate		100%	
RET rank	0.360***	(5.91)	-0.0388	(-0.69)	-0.321***	(-5.30)
RET deviation	-0.00168	(-0.77)	0.00285	(1.14)	-0.00117	(-0.60)
Male	0.106**	(3.11)	-0.142***	(-4.56)	0.0360	(1.17)
Age	-0.00868**	(-2.93)	0.00590*	(2.47)	0.00278	(1.16)
First period	-0.0678***	(-4.90)	0.0290*	(2.03)	0.0389**	(2.90)
Additional period	0.0162***	(7.26)	-0.00804***	(-3.65)	-0.00812***	(-4.41)
OfferDG	-0.000688***	(-10.32)	0.000184**	(3.06)	0.000504***	(7.12)
Tax 20%	-0.00430	(-0.11)	0.0522	(1.46)	-0.0479	(-1.40)
Tax 30%	0.0491	(1.14)	-0.0167	(-0.43)	-0.0324	(-0.85)
Tax 40%	0.0501	(0.52)	0.0490	(0.66)	-0.0991	(-1.17)
Shock, yes	-0.0296	(-0.49)	0.0645	(1.20)	-0.0349	(-0.68)
Shock, no	0.0107	(0.17)	-0.0217	(-0.39)	0.0110	(0.21)
Status, 200 ECU	-0.0340	(-0.46)	-0.0103	(-0.17)	0.0443	(0.68)
Status, 100 ECU	0.138	(1.94)	-0.0396	(-0.53)	-0.0985	(-1.34)
Non-fixed	-0.00306	(-0.08)	0.0437	(1.25)	-0.0406	(-1.15)
Observations	4600		4600		4600	

Clustered SE
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 6: Marginal effects for strategy, conditional on country

	All					
	0%		Intermediate		100%	
RET rank	0.0682***	(5.34)	-0.0217	(-1.34)	-0.0465**	(-3.27)
RET deviation	-0.00169	(-0.96)	0.00442	(1.89)	-0.00272	(-1.43)
Male	0.0249***	(3.59)	-0.0376***	(-4.06)	0.0126	(1.57)
Age	-0.00177*	(-2.39)	0.00131	(1.59)	0.000464	(0.70)
L.Declared 0%	0.308***	(41.26)	-0.0181	(-1.54)	-0.290***	(-25.82)
L.Declared 1-99%	0.0459***	(4.67)	0.321***	(26.55)	-0.367***	(-30.47)
L.Declim	-0.133***	(-5.86)	-0.0550*	(-2.21)	0.188***	(8.27)
OfferDG	-0.000143***	(-7.13)	0.0000470*	(1.97)	0.0000962***	(4.41)
Norms	-0.00857*	(-2.56)	0.000811	(0.18)	0.00776	(1.75)
Trust	-0.000177	(-0.03)	-0.000547	(-0.06)	0.000724	(0.09)
SafeChoices	0.000593	(0.33)	0.000983	(0.42)	-0.00158	(-0.77)
Ideology	0.000894	(0.58)	0.0000452	(0.02)	-0.000939	(-0.49)
Income	0.0397**	(3.24)	-0.0155	(-0.90)	-0.0242	(-1.67)
L.Declared by others	-0.0000101***	(-3.84)	0.00000941**	(2.94)	0.000000644	(0.23)
Russia	0.0316**	(3.00)	0.0521***	(3.71)	-0.0837***	(-6.56)
Oxford	0.0918***	(8.44)	-0.0385**	(-2.65)	-0.0533***	(-4.49)
Observations	8626		8626		8626	
	Chile					
	0%		Intermediate		100%	
RET rank	0.0518*	(2.48)	-0.0289	(-0.88)	-0.0228	(-0.72)
RET deviation	-0.0000191	(-0.01)	0.000255	(0.05)	-0.000235	(-0.06)
Male	0.0231*	(2.00)	0.0000123	(0.00)	-0.0231	(-1.26)
Age	0.000957	(0.97)	-0.00145	(-0.85)	0.000489	(0.30)
L.Declared 0%	0.226***	(18.09)	0.139***	(4.54)	-0.365***	(-12.06)
L.Declared 1-99%	0.0794***	(6.25)	0.448***	(18.29)	-0.527***	(-19.96)
L.Declim	-0.152***	(-4.61)	-0.0967*	(-2.05)	0.248***	(4.98)
OfferDG	-0.0000711*	(-2.20)	-0.0000285	(-0.55)	0.0000996	(1.85)
Norms	-0.0145*	(-2.20)	-0.00766	(-0.70)	0.0222*	(2.07)
Trust	0.00993	(0.88)	-0.00175	(-0.09)	-0.00818	(-0.45)
SafeChoices	0.00291	(0.88)	-0.00391	(-0.78)	0.000997	(0.21)
Ideology	0.000870	(0.36)	-0.00242	(-0.54)	0.00155	(0.38)
Income	0.0466*	(2.40)	-0.00752	(-0.22)	-0.0391	(-1.13)
L.Declared by others	-0.000000590	(-0.16)	0.00000163	(0.25)	-0.00000104	(-0.17)
Observations	2596		2596		2596	
	Russia					
	0%		Intermediate		100%	
RET rank	0.0692**	(2.64)	-0.0351	(-1.16)	-0.0341	(-1.54)
RET deviation	-0.00328	(-0.85)	0.0103*	(2.48)	-0.00701*	(-2.32)
Male	0.0190	(1.27)	-0.0605***	(-3.54)	0.0416**	(3.26)
Age	-0.00490	(-1.18)	0.00579	(1.44)	-0.000883	(-0.39)
L.Declared 0%	0.291***	(14.48)	-0.0970***	(-4.30)	-0.194***	(-13.52)
L.Declared 1-99%	-0.0285	(-1.27)	0.290***	(11.43)	-0.262***	(-13.54)
L.Declim	-0.165***	(-3.59)	0.00836	(0.18)	0.157***	(4.58)
OfferDG	-0.000201***	(-4.29)	0.000166***	(3.32)	0.0000344	(1.02)
Norms	-0.0109	(-1.60)	0.0108	(1.41)	0.0000740	(0.01)
Trust	0.00925	(0.60)	-0.0267	(-1.50)	0.0175	(1.39)
SafeChoices	-0.00222	(-0.59)	0.00320	(0.72)	-0.000987	(-0.32)
Ideology	0.00628	(1.71)	-0.00351	(-0.86)	-0.00277	(-0.85)
Income	0.0135	(0.41)	0.0356	(0.93)	-0.0491	(-1.77)
L.Declared by others	-0.0000335***	(-4.78)	0.0000290***	(3.98)	0.00000445	(0.94)
Observations	2560		2560		2560	
	UK					
	0%		Intermediate		100%	
RET rank	0.0631***	(3.46)	0.0252	(1.16)	-0.0883***	(-4.51)
RET deviation	-0.00231	(-0.92)	0.00421	(1.32)	-0.00190	(-0.70)
Male	0.0300**	(3.04)	-0.0508***	(-4.06)	0.0207	(1.91)
Age	-0.00203*	(-2.39)	0.00199*	(2.34)	0.0000408	(0.05)
L.Declared 0%	0.329***	(30.34)	-0.0672***	(-4.36)	-0.262***	(-17.37)
L.Declared 1-99%	0.0457**	(2.89)	0.236***	(14.22)	-0.282***	(-15.82)
L.Declim	-0.0925**	(-2.66)	-0.0808*	(-2.34)	0.173***	(5.31)
OfferDG	-0.000158***	(-6.03)	0.0000249	(0.83)	0.000133***	(4.84)
Norms	-0.00190	(-0.36)	-0.00597	(-0.96)	0.00786	(1.35)
Trust	-0.0169	(-1.71)	0.0250*	(2.05)	-0.00813	(-0.74)
SafeChoices	0.00149	(0.56)	0.00174	(0.57)	-0.00323	(-1.27)
Ideology	-0.00352	(-1.63)	0.00533*	(2.12)	-0.00181	(-0.83)
Income	0.0333*	(2.10)	-0.0177	(-0.86)	-0.0156	(-0.89)
L.Declared by others	-0.00000897*	(-2.30)	0.00000707	(1.75)	0.00000190	(0.58)
Observations	3470		3470		3470	

Clustered SE, treatment controls not shown
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 7: Marginal effects for strategy, more controls

	First period					
	0%		Intermediate		100%	
RET rank	0.254***	(5.85)	-0.0920	(-1.77)	-0.161***	(-3.38)
RET deviation	0.0102	(1.45)	0.00831	(1.01)	-0.0186*	(-2.32)
Male	0.0714**	(2.86)	-0.0775**	(-2.66)	0.00606	(0.23)
Age	-0.00298	(-1.18)	0.00414	(1.43)	-0.00117	(-0.48)
OfferDG	-0.000527***	(-9.14)	0.000177**	(2.60)	0.000350***	(5.62)
Tax 20%	-0.0385	(-1.33)	0.0488	(1.47)	-0.0103	(-0.34)
Tax 30%	-0.0135	(-0.44)	0.0518	(1.45)	-0.0383	(-1.18)
Tax 40%	-0.0531	(-0.61)	0.158	(1.49)	-0.104	(-1.01)
Russia	0.154***	(3.95)	0.273***	(6.99)	-0.428***	(-10.73)
Oxford	0.252***	(7.72)	-0.0911*	(-2.50)	-0.161***	(-5.90)
Observations	1031		1031		1031	

	Previously declared 0%					
	0%		Intermediate		100%	
RET rank	0.0236	(1.24)	-0.00274	(-0.18)	-0.0209*	(-2.07)
RET deviation	0.000152	(0.07)	0.000495	(0.25)	-0.000647	(-0.56)
Male	0.00142	(0.13)	-0.00883	(-1.06)	0.00741	(1.20)
Age	-0.00274	(-1.83)	0.00243*	(2.28)	0.000312	(0.49)
OfferDG	-0.000106***	(-3.84)	0.0000755***	(3.61)	0.0000306**	(2.62)
Tax 20%	-0.00639	(-0.52)	0.00900	(0.92)	-0.00260	(-0.39)
Tax 30%	-0.00894	(-0.75)	0.00906	(0.91)	-0.000119	(-0.02)
Tax 40%	0.487***	(8.35)	-0.509***	(-8.93)	0.0219	(1.37)
Period	0.00489***	(3.88)	-0.00422***	(-3.71)	-0.000670	(-1.03)
Russia	-0.0146	(-0.83)	0.0200	(1.37)	-0.00544	(-0.69)
Oxford	0.0561***	(3.54)	-0.0338**	(-2.61)	-0.0223**	(-2.87)
Observations	3692		3692		3692	

	Previously declared between 1 and 99%					
	0%		Intermediate		100%	
RET rank	0.0711**	(3.09)	-0.0258	(-0.78)	-0.0453	(-1.93)
RET deviation	-0.00737*	(-2.25)	0.0171***	(3.96)	-0.00975**	(-3.02)
Male	0.0420**	(3.15)	-0.0797***	(-4.21)	0.0377**	(2.78)
Age	-0.00132	(-1.09)	0.000363	(0.22)	0.000962	(1.01)
OfferDG	-0.0000807*	(-1.97)	0.0000272	(0.49)	0.0000535	(1.36)
Tax 20%	-0.0143	(-0.92)	-0.000374	(-0.02)	0.0147	(0.96)
Tax 30%	0.0261	(1.62)	-0.0381	(-1.70)	0.0121	(0.78)
Tax 40%	0.00431	(0.09)	-0.00568	(-0.10)	0.00137	(0.05)
Period	-0.00502*	(-2.55)	0.0105***	(4.14)	-0.00552**	(-2.82)
L.Declim	-0.129***	(-5.39)	-0.0317	(-0.99)	0.160***	(7.70)
Russia	0.0358*	(2.05)	0.0142	(0.58)	-0.0500**	(-2.97)
Oxford	0.0617***	(3.32)	-0.0489*	(-1.97)	-0.0128	(-0.79)
Observations	3077		3077		3077	

	Previously declared 100%					
	0%		Intermediate		100%	
RET rank	0.0490**	(2.80)	-0.0484	(-1.53)	-0.000630	(-0.02)
RET deviation	-0.000681	(-0.28)	-0.00550	(-1.35)	0.00618	(1.36)
Male	0.0158	(1.48)	0.000120	(0.01)	-0.0160	(-0.75)
Age	-0.00149	(-1.13)	-0.000579	(-0.45)	0.00207	(1.13)
OfferDG	-0.0000691*	(-2.50)	-0.0000488	(-1.08)	0.000118*	(2.14)
Tax 20%	0.000656	(0.06)	-0.00892	(-0.41)	0.00826	(0.33)
Tax 30%	0.00669	(0.54)	-0.0198	(-0.88)	0.0131	(0.49)
Tax 40%	-0.00992	(-0.25)	0.0708	(1.01)	-0.0609	(-0.81)
Period	-0.00633***	(-4.15)	-0.0126***	(-5.51)	0.0189***	(7.34)
Russia	0.0475**	(2.78)	0.0380	(1.38)	-0.0855*	(-2.50)
Oxford	0.0469***	(3.96)	-0.0158	(-0.78)	-0.0311	(-1.31)
Observations	2516		2516		2516	

Clustered SE, some treatment controls not shown
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 8: Marginal effects for first-round strategy and transition probabilities

	Chile		Russia		UK		All	
Marginal_cost								
RET rank	-0.530	(-1.82)	-0.427*	(-2.22)	-0.499**	(-2.85)	-0.546***	(-4.45)
RET deviation	-0.00789	(-0.18)	0.00811	(0.32)	0.0205	(0.86)	0.00928	(0.56)
Male	-0.128	(-0.78)	-0.107	(-1.00)	-0.270**	(-2.96)	-0.170**	(-2.59)
Age	-0.0189	(-1.27)	0.0543	(1.56)	0.0242**	(3.02)	0.0177*	(2.36)
L.Declared 0%	-4.231***	(-14.60)	-3.023***	(-8.96)	-3.770***	(-18.45)	-3.750***	(-24.58)
L.Declared 1-99%	-1.693***	(-5.07)	-0.501	(-1.50)	-0.818**	(-2.88)	-1.042***	(-5.89)
L.Declim	2.447***	(3.94)	1.750***	(3.52)	0.752	(1.51)	1.532***	(4.93)
OfferDG	0.000631	(1.50)	0.00150***	(4.07)	0.00135***	(6.08)	0.00127***	(6.76)
Norms	0.146	(1.47)	0.0289	(0.60)	-0.0119	(-0.23)	0.0239	(0.73)
SafeChoices	-0.0611	(-1.25)	0.00388	(0.14)	-0.0231	(-0.90)	-0.0104	(-0.62)
Ideology	-0.0254	(-0.74)	-0.0131	(-0.47)	0.0256	(1.41)	0.00398	(0.27)
Income	-0.727*	(-2.52)	0.129	(0.52)	-0.297*	(-2.04)	-0.340**	(-3.03)
L.Declared by others	-0.0000292	(-0.57)	0.000154**	(3.20)	0.0000228	(0.72)	0.0000335	(1.49)
Tax 20%	0.978***	(5.45)	0.839***	(6.65)	0.820***	(7.43)	0.813***	(10.59)
Tax 30%	1.093***	(6.39)	1.170***	(8.04)	0.949***	(8.77)	1.054***	(13.14)
Tax 40%	0	(.)	0	(.)	1.280***	(5.46)	1.326***	(6.05)
Shock, yes	-1.040	(-1.38)	0.182	(0.89)	-0.0275	(-0.16)	0.0399	(0.31)
Shock, no	-0.851	(-1.12)	0.0462	(0.22)	-0.271	(-1.47)	-0.0707	(-0.60)
Status, 200 ECU	-0.864	(-0.99)	0.0404	(0.21)	0.0195	(0.10)	0.0573	(0.43)
Status, 100 ECU	-0.928	(-1.19)	0.0102	(0.06)	-0.209	(-1.18)	-0.0811	(-0.73)
Non-fixed	-1.269	(-1.69)	-0.0149	(-0.10)	0.109	(0.98)	-0.0547	(-0.65)
First period	-1.303***	(-4.23)	-1.065**	(-2.86)	-1.968***	(-8.72)	-1.789***	(-10.91)
Additional period	0.0156	(0.84)	-0.0288*	(-2.19)	-0.00353	(-0.30)	-0.0147	(-1.84)
Russia							-0.288**	(-2.77)
Oxford							-0.875***	(-8.71)
Constant	3.630***	(3.84)	-1.650*	(-2.02)	-0.485	(-1.30)	0.567	(1.84)
Self_dec_prob								
RET rank	-0.0627	(-0.20)	0.669	(1.55)	1.158**	(3.07)	0.287	(1.47)
RET deviation	-0.0163	(-0.39)	0.155*	(2.50)	0.0552	(1.06)	0.0381	(1.36)
Male	0.104	(0.59)	-0.877***	(-3.31)	-0.598**	(-2.79)	-0.299**	(-2.60)
Age	-0.00896	(-0.60)	0.0419	(0.82)	0.00930	(0.70)	0.000822	(0.09)
L.Declared 0%	2.583***	(6.65)	2.737***	(6.32)	2.918***	(7.35)	2.675***	(10.84)
L.Declared 1-99%	4.823***	(14.98)	5.264***	(13.42)	5.284***	(11.19)	5.008***	(23.28)
L.Declim	-1.811***	(-4.15)	-2.448***	(-4.12)	-2.892***	(-4.67)	-2.080***	(-7.11)
OfferDG	-0.000802	(-1.53)	-0.000174	(-0.25)	-0.00135*	(-2.36)	-0.000805*	(-2.54)
Norms	-0.146	(-1.42)	0.0684	(0.60)	-0.122	(-1.17)	-0.0714	(-1.19)
SafeChoices	-0.0259	(-0.57)	0.106	(1.43)	0.0585	(1.28)	0.0316	(1.09)
Ideology	-0.0176	(-0.45)	0.0197	(0.32)	0.0559	(1.32)	0.00714	(0.27)
Income	0.115	(0.35)	0.722	(1.29)	0.170	(0.46)	0.0976	(0.45)
L.Declared by others	0.0000209	(0.33)	0.0000365	(0.38)	0.0000506	(0.76)	0.0000317	(0.80)
Tax 20%	-0.284	(-1.43)	0.261	(0.96)	0.465	(1.86)	0.0228	(0.18)
Tax 30%	-0.319	(-1.64)	0.416	(1.29)	0.0256	(0.10)	-0.0555	(-0.41)
Tax 40%	0	(.)	0	(.)	0.507	(0.93)	0.0751	(0.17)
Shock, yes	0.647	(1.87)	-0.466	(-1.08)	0.751	(1.50)	0.293	(1.27)
Shock, no	0.278	(0.75)	-0.594	(-1.42)	-0.837	(-1.41)	-0.199	(-0.88)
Status, 200 ECU	0.173	(0.51)	-0.780	(-1.75)	-0.656	(-1.57)	-0.217	(-0.99)
Status, 100 ECU	0.242	(0.64)	-0.810	(-1.59)	1.057	(1.86)	0.0764	(0.31)
Non-fixed	0.140	(0.52)	-0.712*	(-2.19)	0.511*	(2.00)	-0.117	(-0.84)
First period	1.040***	(3.98)	3.479***	(8.21)	1.869***	(6.04)	1.876***	(10.84)
Additional period	-0.0622**	(-2.84)	-0.0347	(-1.30)	-0.000969	(-0.03)	-0.0369*	(-2.50)
Russia							1.025***	(6.01)
Oxford							0.260	(1.56)
Constant	-1.076	(-1.56)	-2.754*	(-2.38)	-2.837***	(-3.76)	-1.968***	(-4.49)
Observations	2596		2560		3470		8626	

Clustered SE, z-scores in parenthesis, constant not shown
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 9: Estimation of the structural model, more controls

	Chile		Russia		UK		All	
Self_dec_threshold								
RET rank	-0.142	(-0.79)	0.151	(1.15)	0.285	(1.55)	-0.00315	(-0.04)
RET deviation	0.0263	(1.34)	-0.00851	(-0.65)	0.0222	(1.12)	0.0108	(1.01)
Male	0.0687	(0.72)	-0.0440	(-0.62)	-0.225*	(-2.53)	-0.0525	(-1.06)
Age	0.000330	(0.04)	0.00860	(1.55)	0.00940*	(2.16)	0.000946	(0.23)
L.Declared 0%	-0.872***	(-3.82)	-1.153***	(-6.03)	-1.467***	(-7.77)	-1.023***	(-8.28)
L.Declared 1-99%	-1.174***	(-7.84)	-1.384***	(-7.90)	-1.815***	(-11.38)	-1.303***	(-12.14)
L.Declim	2.705***	(13.79)	2.352***	(13.25)	2.761***	(11.07)	2.600***	(22.71)
OfferDG	0.000531	(1.67)	0.000310	(1.67)	0.000229	(0.96)	0.000307*	(2.21)
Norms	0.0645	(1.20)	0.00544	(0.16)	-0.0554	(-1.32)	0.00618	(0.25)
SafeChoices	0.0231	(0.80)	-0.00341	(-0.19)	-0.0184	(-1.12)	0.00277	(0.22)
Ideology	-0.00488	(-0.26)	-0.0487**	(-3.03)	0.0127	(0.54)	-0.0255*	(-2.25)
Income	0.165	(0.64)	0.117	(0.71)	0.291*	(2.06)	0.151	(1.38)
L.Declared by others	-0.000000638	(-0.02)	0.000104***	(4.23)	0.0000325	(1.19)	0.0000549***	(3.53)
Tax 20%	0.145	(1.19)	-0.0512	(-0.70)	0.0128	(0.15)	0.0211	(0.39)
Tax 30%	0.264*	(2.30)	-0.0611	(-0.67)	0.189	(1.83)	0.105	(1.71)
Tax 40%	0	(.)	0	(.)	-0.0772	(-0.38)	-0.211	(-0.98)
Shock, yes	0.0183	(0.11)	-0.0768	(-0.83)	-0.175	(-1.74)	-0.0724	(-1.05)
Shock, no	-0.00432	(-0.03)	-0.0576	(-0.70)	-0.142	(-1.11)	-0.0629	(-0.87)
Status, 200 ECU	0.226	(1.07)	-0.0493	(-0.50)	-0.285	(-1.79)	0.0314	(0.35)
Status, 100 ECU	-0.0235	(-0.15)	-0.00762	(-0.09)	0.330*	(2.46)	0.0568	(0.81)
Non-fixed	-0.0908	(-0.66)	-0.0908	(-0.80)	0.217	(1.73)	-0.0152	(-0.23)
First period	-0.125	(-0.68)	-0.156	(-0.84)	-0.862***	(-4.95)	-0.178	(-1.61)
Additional period	-0.00315	(-0.25)	0.000219	(0.02)	0.0156	(1.52)	0.00243	(0.38)
Russia							0.0853	(1.23)
Oxford							0.0389	(0.46)
Constant	-0.570	(-1.37)	-0.0451	(-0.16)	-0.187	(-0.64)	-0.241	(-1.10)
Observations	2596		2560		3470		8626	

Clustered SE, z-scores in parenthesis, constant not shown
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 10: Estimation of the structural model, more controls (continued)

	First period		1 lag		2 lags		4 lags	
Marginal_cost								
RET rank	-1.186***	(-5.37)	-0.383***	(-3.71)	-0.195	(-1.92)	-0.0532	(-0.39)
RET deviation	-0.0353	(-1.03)	0.0156	(1.00)	0.00622	(0.31)	-0.0242	(-0.93)
Additional period			-0.00855	(-1.24)	0.0125	(1.14)	0.0226	(1.02)
L.Declared 0%			-3.950***	(-27.89)	-3.039***	(-13.63)	-2.421***	(-8.35)
L2.Declared 0%					-1.500***	(-8.86)	-1.694***	(-6.70)
L3.Declared 0%							-0.662***	(-3.37)
L4.Declared 0%							-0.301	(-1.68)
L.Declared 1-99%			-1.142***	(-7.07)	-0.841***	(-3.33)	-0.346	(-1.10)
L2.Declared 1-99%					-0.519**	(-2.66)	-1.187***	(-4.29)
L3.Declared 1-99%							-0.153	(-0.67)
L4.Declared 1-99%							0.174	(0.95)
L.Declim			1.567***	(5.43)	1.297**	(3.18)	0.908*	(2.07)
L2.Declim					0.705*	(2.49)	1.513***	(3.55)
L3.Declim							-0.903**	(-2.65)
L4.Declim							0.566*	(2.18)
Constant	-0.854*	(-2.04)	0.286	(1.26)	0.563*	(2.34)	0.793*	(2.24)
Self_dec_prob								
RET rank	0.253	(0.80)	0.134	(0.69)	-0.00221	(-0.01)	0.0700	(0.28)
RET deviation	0.0955	(1.85)	0.0398	(1.26)	0.0600	(1.51)	0.0585	(1.20)
Additional period			-0.0331*	(-2.52)	-0.0145	(-0.77)	0.0124	(0.33)
L.Declared 0%			2.779***	(12.56)	2.255***	(8.64)	1.714***	(5.00)
L2.Declared 0%					1.028***	(3.64)	0.943*	(2.50)
L3.Declared 0%							0.619	(1.94)
L4.Declared 0%							0.193	(0.62)
L.Declared 1-99%			5.130***	(25.65)	4.041***	(17.73)	3.274***	(10.86)
L2.Declared 1-99%					2.233***	(10.96)	1.679***	(5.22)
L3.Declared 1-99%							1.251***	(3.52)
L4.Declared 1-99%							0.949**	(3.08)
L.Declim			-2.189***	(-8.27)	-1.729***	(-5.11)	-1.391**	(-3.08)
L2.Declim					-0.234	(-0.71)	-0.224	(-0.45)
L3.Declim							-0.102	(-0.19)
L4.Declim							0.249	(0.56)
Constant	-0.278	(-0.53)	-1.324***	(-4.32)	-2.101***	(-6.65)	-2.606***	(-5.50)
Self_dec_threshold								
RET rank	0.0281	(0.17)	0.0224	(0.24)	0.0339	(0.37)	0.0703	(0.72)
RET deviation	-0.0667*	(-2.21)	0.0269**	(2.60)	0.0261*	(2.52)	0.0262*	(2.47)
Additional period			0.00547	(0.87)	0.0183*	(2.44)	0.00944	(0.79)
L.Declared 0%			-1.096***	(-9.46)	-0.895***	(-7.80)	-0.737***	(-5.16)
L2.Declared 0%					-0.386***	(-4.34)	-0.349**	(-3.00)
L3.Declared 0%							-0.243	(-1.92)
L4.Declared 0%							-0.0759	(-0.66)
L.Declared 1-99%			-1.349***	(-13.53)	-1.088***	(-11.15)	-0.932***	(-7.89)
L2.Declared 1-99%					-0.499***	(-7.19)	-0.489***	(-5.74)
L3.Declared 1-99%							-0.256*	(-2.37)
L4.Declared 1-99%							0.00686	(0.08)
L.Declim			2.606***	(25.33)	2.078***	(21.84)	1.815***	(15.14)
L2.Declim					0.989***	(10.25)	0.914***	(7.06)
L3.Declim							0.375**	(3.08)
L4.Declim							0.331**	(2.96)
Constant	-0.263	(-1.11)	-0.212	(-1.30)	-0.0740	(-0.41)	0.00727	(0.03)
Observations	1031		9287		8255		6191	

Clustered SE, z-scores in parenthesis, other covariates not shown
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 11: Estimation of the structural model, several lags of cheating

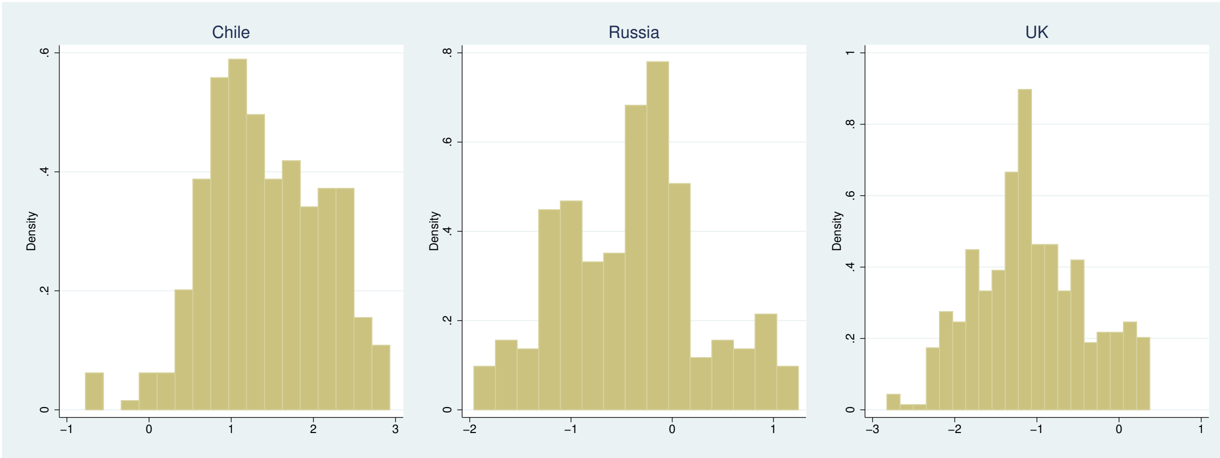


Figure 7: Empirical distribution of $\hat{\alpha}_1 + \hat{\beta}_1 X$ for the first round.

	(1) Chile	(2) Russia	(3) UK	(4) All	(5) Chile	(6) Russia	(7) UK	(8) All
OfferDG	-0.0000547	-0.000243**	-0.000201***	-0.000207***	-0.0000432	-0.000291***	-0.000251***	-0.000216***
	(-0.58)	(-2.92)	(-3.43)	(-4.84)	(-0.45)	(-3.47)	(-4.31)	(-5.05)
Age	-0.00738*	-0.00356	-0.00826***	-0.00834***	-0.00781**	-0.00166	-0.00810***	-0.00833***
	(-2.38)	(-0.53)	(-4.11)	(-5.12)	(-2.63)	(-0.25)	(-4.00)	(-5.16)
Male	0.168***	0.152***	0.148***	0.152***	0.167***	0.155***	0.150***	0.154***
	(5.36)	(4.37)	(5.92)	(8.89)	(5.24)	(4.45)	(5.96)	(8.98)
Tax rate, %	0.0765	0.0587	-0.149	0.00802				
	(0.40)	(0.26)	(-1.06)	(0.08)				
Shock	0.0395	0.0194	0.0373	0.0227				
	(0.65)	(0.39)	(0.93)	(0.84)				
Status, 200 ECU	-0.0450	0.0745	0.0548	0.0236				
	(-0.62)	(1.20)	(1.13)	(0.70)				
Status, 100 ECU	0.0575	0.103	0.0243	0.0470				
	(0.79)	(1.67)	(0.51)	(1.41)				
Non-fixed	0.0843	0.114*	-0.0977**	0.00866				
	(1.66)	(2.31)	(-3.19)	(0.39)				
Russia				0.275***				0.280***
				(10.84)				(11.38)
Oxford				0.157***				0.160***
				(7.23)				(7.58)
Trust					0.0323	-0.0450	-0.0349	-0.0146
					(0.99)	(-1.23)	(-1.34)	(-0.83)
Ideology					0.00605	-0.0106	0.00767	0.00244
					(0.83)	(-1.27)	(1.35)	(0.63)
Norms					0.0187	-0.0225	-0.0266*	-0.0138
					(1.05)	(-1.29)	(-2.02)	(-1.55)
Constant	0.541***	0.836***	0.898***	0.684***	0.583***	0.938***	0.848***	0.692***
	(4.90)	(6.07)	(14.85)	(13.07)	(6.04)	(6.86)	(14.25)	(14.17)
Observations	316	256	460	1032	316	256	460	1032

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 12: Predicting RET rank

	(1) Chile	(2) Russia	(3) UK	(4) All
OfferDG	-0.000179	-0.00232**	-0.00235***	-0.00210***
	(-0.23)	(-3.33)	(-3.50)	(-4.91)
Age	-0.0576*	-0.0283	-0.0898***	-0.0897***
	(-2.15)	(-0.77)	(-4.22)	(-5.80)
Male	1.504***	1.494***	1.703***	1.561***
	(5.54)	(5.03)	(5.63)	(8.75)
Trust	0.302	-0.539	-0.567	-0.306
	(1.10)	(-1.73)	(-1.83)	(-1.66)
Ideology	0.0314	-0.0929	0.120	0.0616
	(0.50)	(-1.21)	(1.87)	(1.56)
Scores for component 1	0.214	-0.229	-0.331*	-0.175*
	(1.47)	(-1.62)	(-2.15)	(-1.98)
Tax rate, %	0.337	0.448	-2.013	-0.364
	(0.20)	(0.21)	(-1.19)	(-0.34)
Shock, yes	0.654	0.129	0.325	0.230
	(1.34)	(0.31)	(0.73)	(0.88)
Shock, no	0.457	0.595	0.524	0.378
	(0.89)	(1.20)	(1.04)	(1.30)
Status, 200 ECU	-0.0240	0.696	0.855	0.387
	(-0.04)	(1.15)	(1.41)	(1.05)
Status, 100 ECU	0.918	0.622	0.180	0.324
	(1.75)	(1.10)	(0.36)	(1.03)
Non-fixed	1.081*	1.137**	-1.024**	-0.0452
	(2.50)	(2.72)	(-2.72)	(-0.19)
Period	0.175***	0.205***	0.120***	0.158***
	(15.04)	(14.66)	(12.25)	(23.57)
Russia				2.412***
				(10.38)
Oxford				3.388***
				(15.38)
Constant	6.974***	10.81***	13.39***	9.334***
	(6.86)	(13.18)	(18.23)	(17.11)
Observations	3160	2560	4600	10320

Clustered SE

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

Table 13: Predicting RET performance in a given round

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Chile	Russia	UK	All	Chile	Russia	UK	All
L.Declared 0%	-0.117	0.335	0.145	0.0930	0.154	0.187	-0.379	0.200
	(-0.52)	(1.49)	(0.87)	(0.83)	(0.80)	(1.04)	(-1.23)	(1.67)
L.Declared 1-99%	0.0309	0.228	0.0906	0.0750	0.0328	-0.162	-0.314	-0.0586
	(0.23)	(1.09)	(0.61)	(0.84)	(0.22)	(-1.03)	(-1.58)	(-0.62)
L.Shock, yes	0.0822	-0.131	-0.0440	-0.0269	-0.0424	0.159	0.529	0.0825
	(0.46)	(-0.90)	(-0.28)	(-0.28)	(-0.24)	(0.94)	(1.82)	(0.81)
L.Declared, others	0.0000329	-0.00000714	0.0000306	0.0000301	0.0000269	0.00000197	0.000342	0.0000116
	(0.79)	(-0.13)	(0.74)	(1.17)	(0.88)	(0.14)	(1.80)	(0.87)
L.Audited					-0.0909	-0.133	-0.164	-0.124
					(-0.89)	(-1.14)	(-1.49)	(-1.95)
Observations	2844	2304	4140	9288	2724	2304	4140	9168

Clustered SE, subject and periog fixed effects

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

Table 14: Predicting RET performance in a given round, subject fixed effects

Appendix B. Screenshots from the experiment

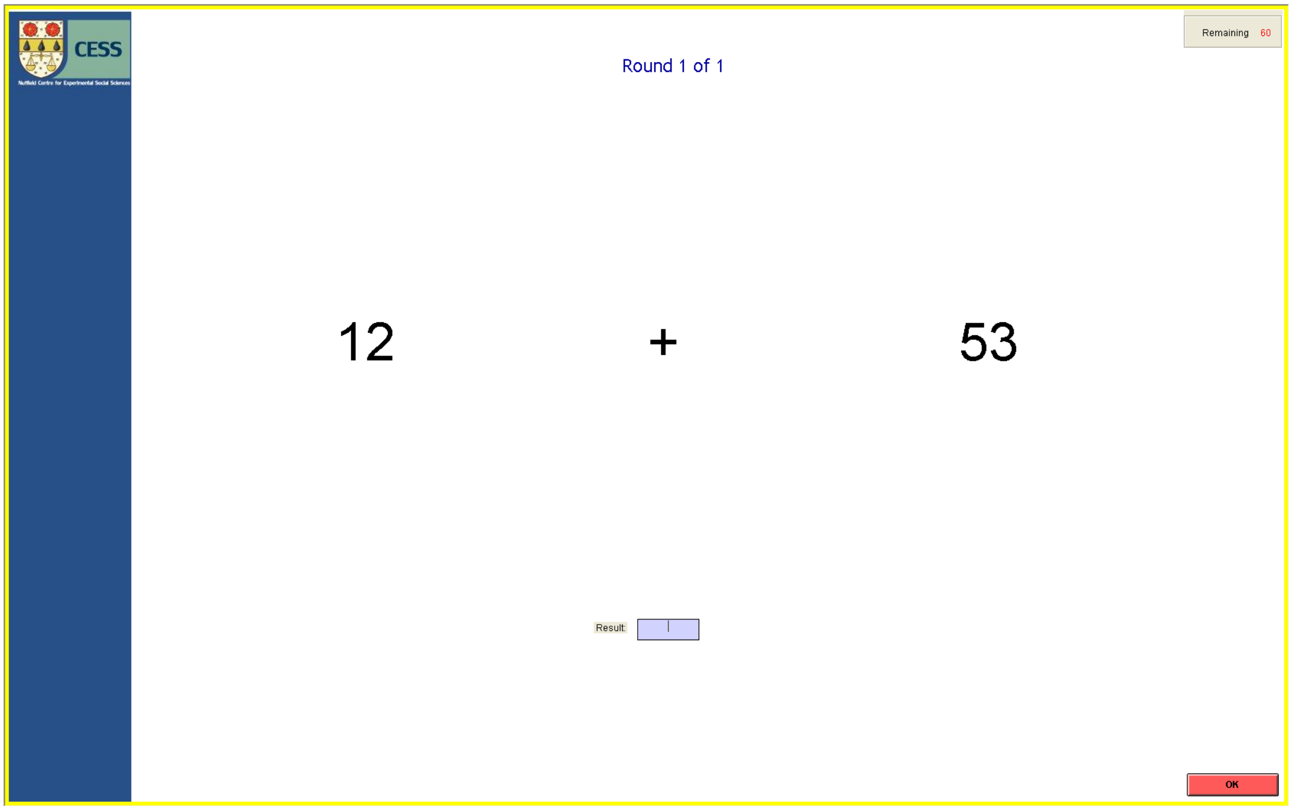


Figure 8: Real effort task, UK

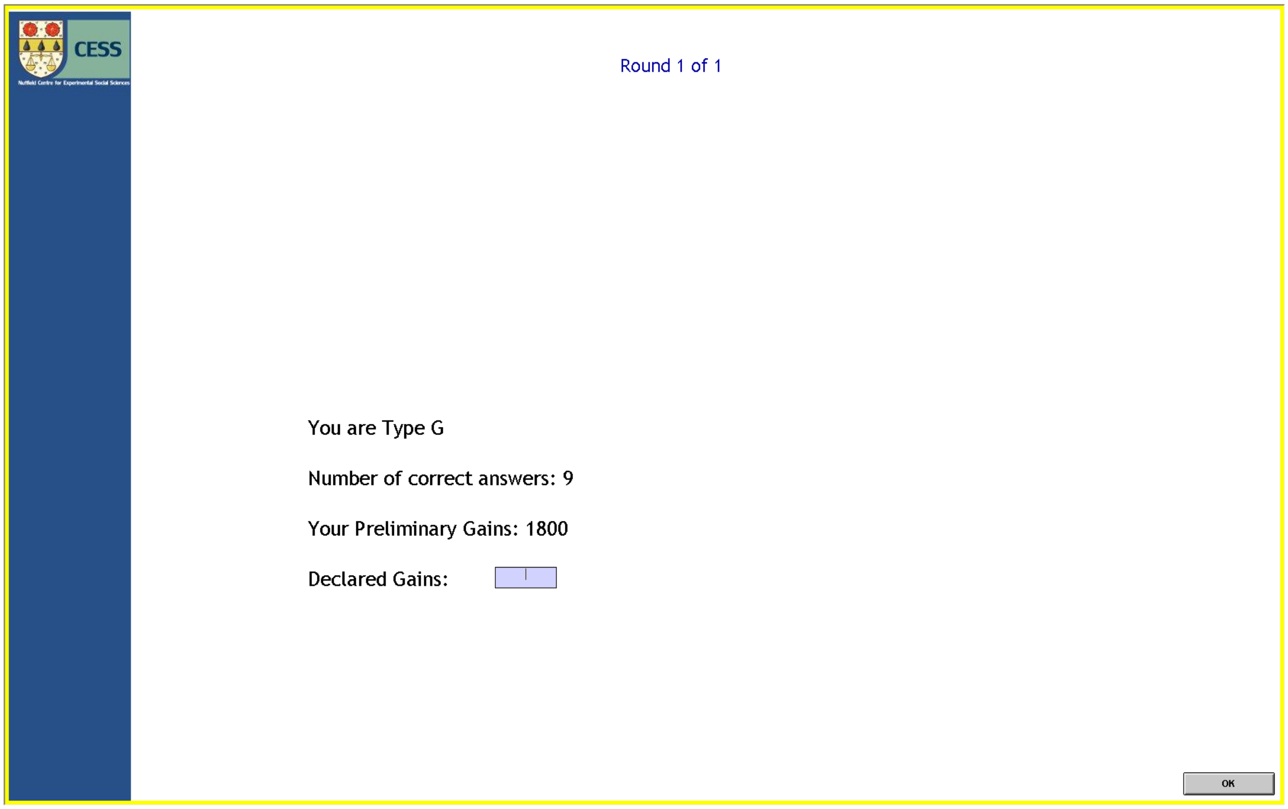


Figure 9: Declaration of gains, UK

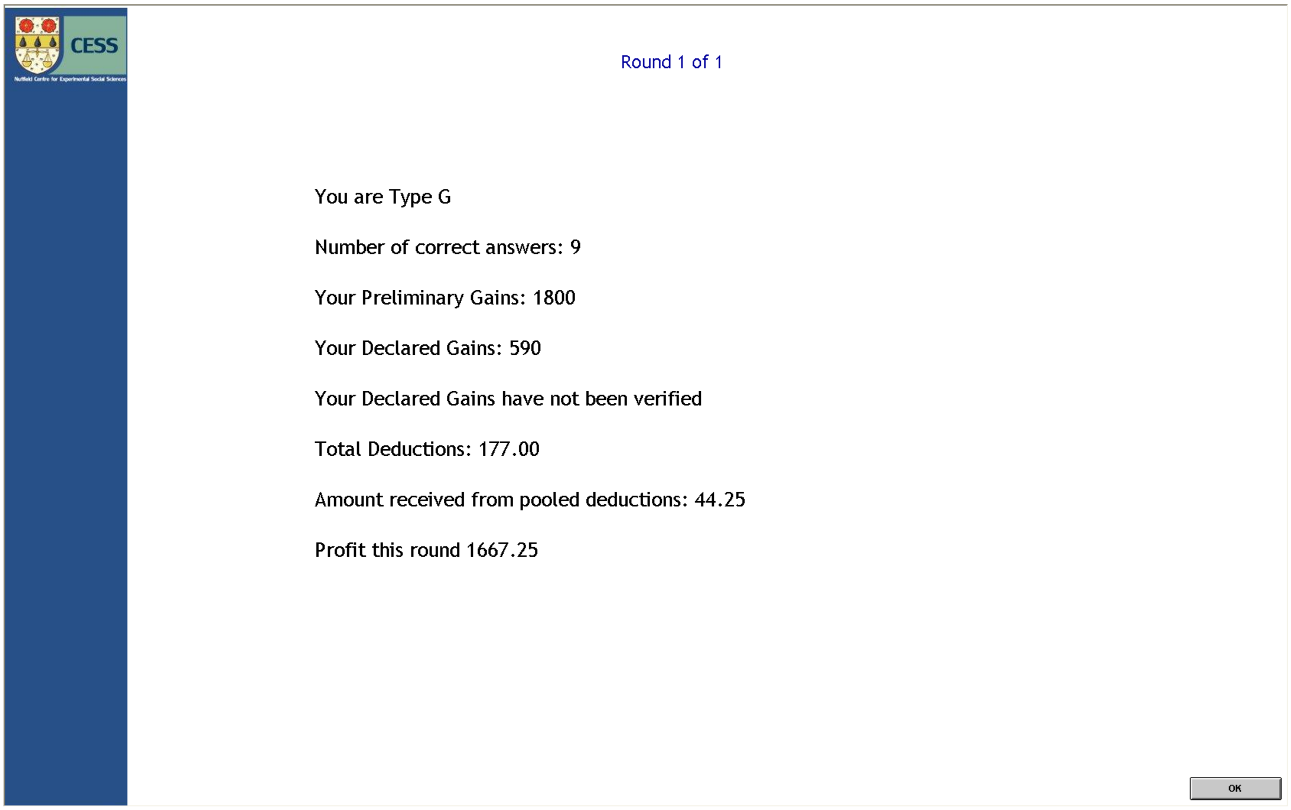


Figure 10: Results in a round (Status treatment), UK

Appendix C. Die tossing game and expected performance.

As our main measure of cheating, we use the fraction of income earned through RET task (and, possibly, obtained as an income shock) that the person chooses not to declare. It would be of an interest to see whether this measure correlates with other indicators of a person's tendency to cheat. In our experiment, 468 out of 1032 subjects participated in the die tossing game that followed the main experimental modules, and is standard tool for inferring truth-telling preferences (Abeler et. al., 2013). In Table 15 we report multinomial logistic regression, where we estimate the association between the number of times that a participant has decided to under-report income and the likelihood of reporting different values in the die tossing game.

	1	2	3	4	5	6
All	0.0266	-0.00927	-0.0182	-0.0283	0.00766	0.0310
	(0.68)	(-0.23)	(-0.40)	(-0.55)	(0.11)	(0.39)
Observations	468	468	468	468	468	468
Chile	0.0550	-0.00203	-0.0792	-0.0720	0.322**	-0.218
	(0.79)	(-0.03)	(-1.00)	(-0.79)	(2.75)	(-1.76)
Observations	180	180	180	180	180	180
Russia	-0.0490	-0.0404	0.0436	0.0260	-0.00465	0.0301
	(-0.86)	(-0.72)	(0.58)	(0.29)	(-0.04)	(0.23)
Observations	156	156	156	156	156	156
UK	0.0426	0.0297	-0.0141	-0.0493	-0.473**	0.375**
	(0.51)	(0.50)	(-0.17)	(-0.53)	(-3.15)	(2.58)
Observations	132	132	132	132	132	132

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

Table 15: Likelihood of reported dice results, marginal effects of RET rank

We find that the number of times that the person has chosen to declare zero earnings is negatively associated with reporting a value of "1" and positively associated with reporting a value of '6". A person who always declared 100% of his earnings is 23.3% less likely to report a value of "6" and 9.7% more likely to report a value of "1" than someone who always declared zero. For one country, the UK, values reported in the die game are actually associated with performance at the RET. Individuals performing above the national median report this value 72% of the time, compared with 45% of the time for individuals with below-median performance; this difference is significant ($p = 0.003$, two-tailed t-test). In Russia, high performers are also more likely to report "6" than low performers, although the difference is not statistically significant. At the same time, in Chile high performers are more likely to report "5", and less likely to report "6", suggesting the existence of self-deceptive behavior (Figure 11).

In our experiments, subjects who have high ability are indeed aware of that fact. In the non-fixed treatment, in the beginning of the first round the subjects were asked to rank their performance relative to other members of their group. In Table 16 we report the average RET ranks of subjects by their predicted performance in the first round.

Predicted rank	Average RET rank (sd)	n	p
1	.645(.291)	73	.0038
2	.521(.260)	107	.0297
3	.422(.314)	70	.0029
4	.254(.192)	22	

Table 16: RET rank by predicted first-round performance.

We also calculate the p-values for the two-tailed difference of means test comparing the average RET rank for subjects who expected to rank first with the subjects who expected to ran second, and so forth. It follows that subjects who expected to rank higher in the first round also had higher national RET ranks.

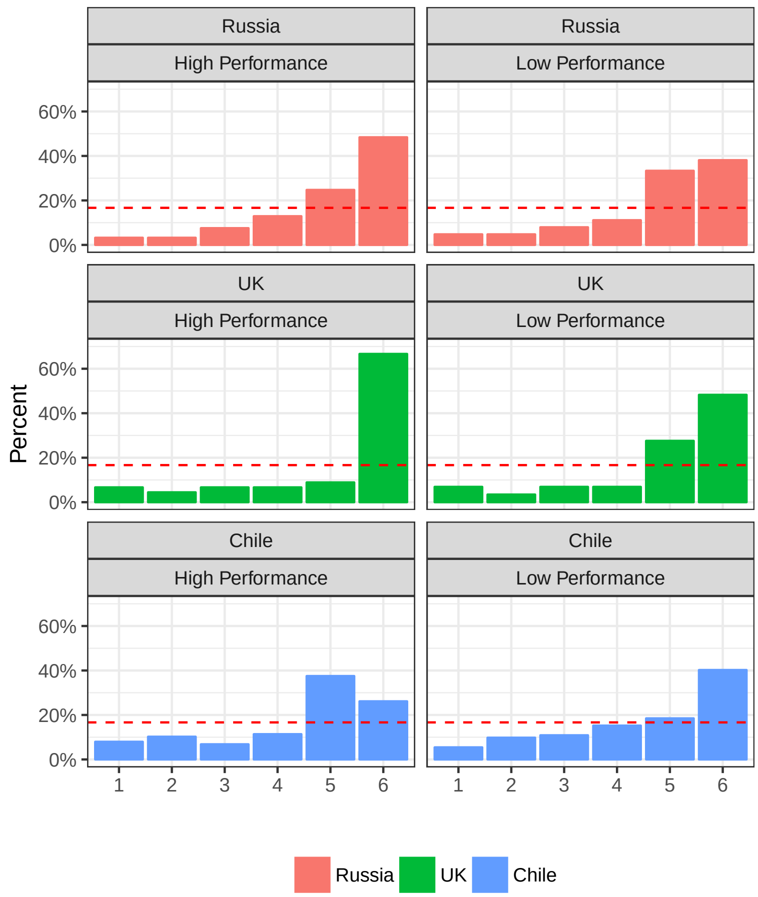


Figure 11: Die results depending on performance