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JEL Classification: C92, D72, H26, H30

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Meritocracy and Income Redistribution: a real-effort task experiment with tax avoidance[1]

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Abstract:

This paper examines how voters choose both the tax rate and the level of tax avoidance in different societies, considering luck versus merit as the source of pre-tax income inequality. We propose a laboratory experiment based on the redistributive politics and labor market model by Jiménez-Jiménez *et al.* (2025). In this model, skilled and unskilled workers decide, by majority voting, between two tax schemes (low and high), with only skilled workers able to avoid taxes. Our experimental design includes four treatments that vary the cost of tax avoidance and the source of initial pre-tax income inequality, with the role of skilled or unskilled workers determined either through a tournament or randomly. Our findings suggest that in economies where tax avoidance is easy, luck as the source of pre-tax income inequality leads individuals to behave more frequently as in the theoretical equilibrium in which the high tax rate is implemented, and skilled workers avoid taxes. Conversely, in economies with a high cost of tax avoidance, meritocracy reinforces the theoretical equilibrium characterized by a higher frequency of votes for the low tax rate and lower levels of tax avoidance. Notably, meritocracy appears to improve income inequality when the cost of tax avoidance is high, but it harms income inequality when that cost is low.

JEL codes: C92, D72, H26, H30

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1. Introduction

Income inequality is one of the major concerns for democracies nowadays. However, this concern is not homogeneously spread around the world. According to the World Bank data, the US Gini Index was 41.3 in 2022, ten points higher than the European Union's average. The tolerance level for income inequality varies based on individuals' beliefs about the roles of luck and effort (or merit) in determining their lifetime earnings (Alesina and Angeletos, 2005). Moreover, people's perception of the effectiveness of tools to increase income redistribution, such as the progressivity of taxes, influences their preferences regarding income inequality. This is a serious problem, as tax abuse leads to an estimated annual loss of over $492 billion worldwide (Tax Justice Network, 2024), which hampers income redistribution efforts and worsens income inequality.

In this paper, we investigate the effects of meritocracy and tax avoidance on decisions regarding income redistribution. Our objective is to study how voters decide on tax rates and the level of tax avoidance in different societies while analyzing the roles of luck and merit as sources of pre-tax income inequality. To achieve this, we propose a laboratory experiment based on the redistributive politics and labor market model developed by Jiménez-Jiménez *et al.* (2025). In this model, skilled and unskilled workers vote by majority on two tax schemes (low and high), and only skilled workers can avoid taxes under two different tax avoidance costs. When the cost of tax avoidance is low, the equilibrium results in implementing a high tax rate alongside tax avoidance. Conversely, when the cost of tax avoidance is high, unskilled workers tend to vote for lower tax rates, discouraging skilled workers from avoiding taxes and consequently mitigating losses in income redistribution. To test these results, Jiménez-Jiménez *et al.* (2025) conducted a laboratory experiment where the pre-tax income inequality, i.e., the role of skilled or unskilled workers, was determined through a tournament among subjects. This paper introduces additional treatments in which pre-tax income inequality is assigned randomly. We compare the voting behavior regarding taxes and tax avoidance in these two different societal contexts.

Our experiment yields two main findings. First, we observe that when the cost of tax avoidance is low, the theoretical equilibrium (a high tax rate and tax avoidance) is more frequently reached in treatments where luck determines pre-tax income inequality compared to those where it is determined by meritocracy. Second, when the cost of tax

avoidance is high, the theoretical predictions (a low tax rate and no tax avoidance) align more closely with the evidence in treatments where meritocracy determines pre-tax income inequality, as opposed to those where it is determined by luck. Finally, our findings suggest that meritocracy reduces income inequality when the cost of tax avoidance is high but increases it when that cost is low.

We identify two main drivers behind our results. Firstly, we find that the high (low) tax rate is more likely to be chosen by majority voting when pre-tax income inequality is determined by luck (merit), regardless of the tax avoidance costs. This aligns with the theoretical predictions of Alesina and Angeletos (2005) and is primarily explained by the voting behavior of unskilled workers, who are the median voters.[2] Secondly, we observe a general pattern of reciprocity between skilled and unskilled workers: an increase in tax avoidance encourages unskilled workers to favor a high tax rate, and conversely, a higher vote share for a high tax rate results in increased tax avoidance.

Extensive experimental research has examined voting behavior regarding the choice of income redistribution and the level of income inequality. (see, among others, Cabrales *et al*., 2012; Agranov and Palfrey, 2015; and Cappelen *et al*., 2018). However, only a few studies have integrated real-effort tasks into their experimental designs to investigate how taxation influences redistribution choices (Jiménez-Jiménez *et al*., 2020; Sausgruber *et al.*, 2021; Jiménez-Jiménez *et al.*, 2023 and 2025).

Our paper also complements the existing literature on fairness and preferences regarding income inequality. On one hand, numerous experimental studies demonstrates that people are willing to sacrifice economic gains to do what they consider fair. Charness *et al.* (2020) provide a thorough review of this evidence. On the other hand, new empirical studies indicate that meritocracy influences attitudes toward income inequality (see Almas et al., 2024, for a comprehensive literature review). In this line, the real-effort task experiment by Jimenez-Jiménez *et al.* (2020) finds that subjects favored lower levels of income redistribution when pre-tax wages are determined by their talent in a tournament (than when it is random). They obtain this result only if the pre-tax income inequality is sufficiently high. Almas *et al.* (2020) conduct a large-scale international social preference experiment comparing American and Norwegian attitudes toward income inequality. They find that when income inequality is attributed to merit rather than luck, there is a

[2] Skilled workers also show an increased likelihood of voting for the high tax rate when luck determines pre-tax income.

significant increase in the acceptance of inequality in both countries. We contribute to this literature by examining how meritocracy affects the democratic choice regarding income inequality in a simulated real-life economy where tax avoidance is possible.

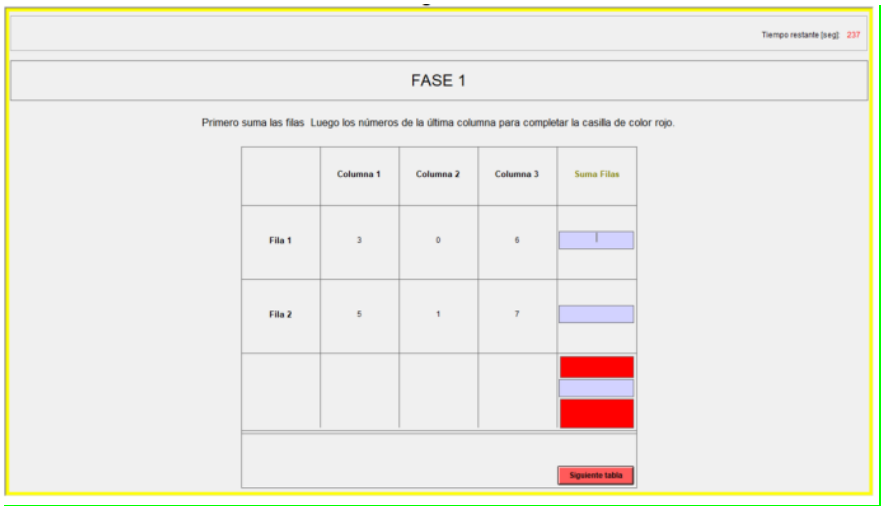
The remainder of the paper is organized as follows: Section 2 presents the experimental design and the hypotheses to be tested. Section 3 presents the main results and discusses the validity of the hypotheses, while Section 4 provides a conclusion.

2. Experimental design and Hypothesis

Our experiment was conducted at the Laboratorio de Economía Experimental (LEE) at the University Jaume I of Castellón. It involved four sessions (one per treatment), involving 300 participants recruited online using the ORSEE software. All sessions were run using z-Tree software (Fischbacher, 2007). None of the subjects was allowed to participate in more than one session.

In our experiment, subjects were required to perform a real-effort task to earn income after voting for their preferred tax rate. This task was taken from Corgnet *et al.* (2015) and consisted of adding up several numbers. In particular, subjects had to add one-digit numbers in 2 × 3 tables (see Figure 1). They had to add the sum of all columns and rows in a table before writing the final solution (see the shaded cell in the lower right corner of Figure 1). They were not allowed to use a calculator or any other electronic devices. This stage was the only source of real payoffs for subjects, which was known information (see instructions in Appendix A).

Figure 1. The real-effort task



2.1. Treatments

This experiment consisted of several treatments in which subjects were allocated to either Group A (skilled workers) or Group B (unskilled workers). The group determined the wages that subjects would earn at the end of the real-effort task. Subjects in Group A would earn 500 ECUs, while agents in Group B would earn 100 ECUs. In the **Tournament treatments,** agents were allocated to Group A or B based on their performance in a tournament, where each subject had to complete the aforementioned real-effort task (meritocracy). In the **Random treatments**, agents were randomly allocated to either Group A or Group B (luck).

Each treatment consisted of several phases:

Phase 1: Assignment to groups. Each subject performed the real-effort task for 4 minutes.

In the **Tournament treatments,** the top third of the subjects in this phase were assigned to Group A (skilled workers) and the rest to Group B (unskilled workers). In the event of ties, the subjects competed again in an additional round for 1.5 minutes. After this round, if there were additional ties, the subjects were randomly assigned to either Group A or Group B. The tournament was played only once at the beginning of the session.

In the **Random treatments,** subjects were randomly assigned to Group A (skilled workers) and Group B (unskilled workers).

In this first phase, subjects were aware that members of Group A would receive 500 ECUs if they completed the task in the second phase, whereas those in Group B would earn 100 ECUs. Subjects were assigned to groups of three, each comprising one person from Group A and two from Group B. The groups remained fixed throughout the rest of the session. The following phases were common to both Tournament and Random treatments. They lasted 15 periods, but the subjects were not informed about this length.

Phase 2: Voting. At the beginning of each period, each group member had to vote for one of the two tax rates proposed to them to be implemented in their group: a low tax rate of 0.3 or a high one of 0.6. In each group, the tax rate was selected by a simple majority and announced for all group members.

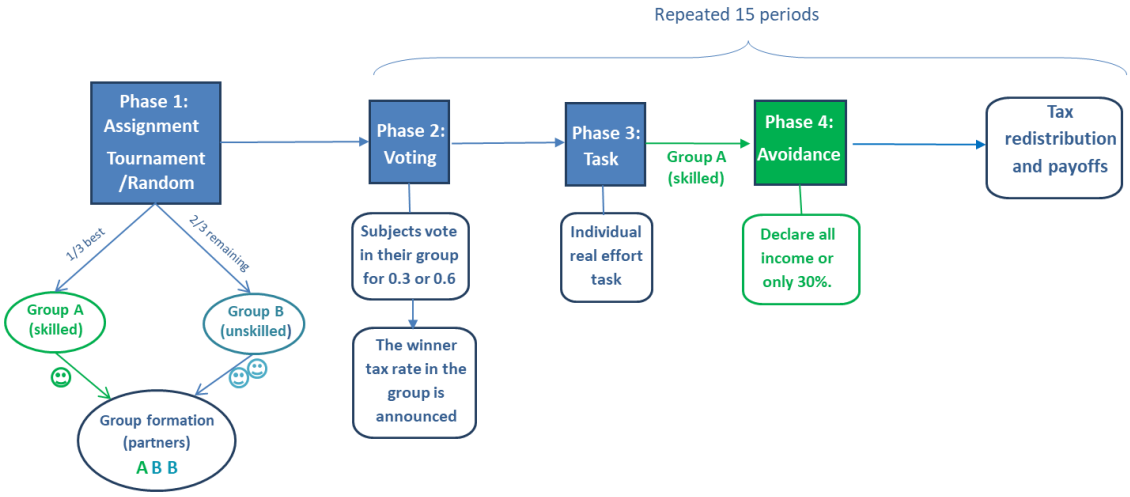
Phase 3: Task performance. Subjects had to perform the previous real-effort task for 2 minutes (see Figure 1). Subjects earned a positive amount of ECUs as long as they

correctly added at least 1 table in a round: those of Group A earned 500 ECUs, and subjects of Group B earned 100 ECUs.

Phase 4: Avoidance decision. This phase is only available for subjects in Group A (skilled workers) of each group. They had to decide whether to declare all the income obtained in that round or just 30% of it. If they decided to avoid taxes, they had to incur a cost, and we considered two different scenarios, as outlined in the model by Jiménez-Jiménez et al. (2025). One scenario involved easy avoidance (cost = 60 ECUs), and another involved moderate avoidance (cost = 130 ECUs). At the end of this phase, all agents in the group were informed about the after-tax incomes of all members. In addition, agents in Group B were informed about the decision made by the subject in Group A in their group and their after-tax incomes if that subject had made the alternative decision.

Figure 2 presents a timeline of the phases and decisions of the experiment.

Figure 2. Timeline of treatments



2.2 Information and Payoffs

Next, we show the payoff functions for each scenario.

If there was no tax avoidance (NA) in a group, the following function shows the payoff in ECUs after taxes for subject i = U (unskilled, group B), S (skilled, group A) in each period

$$u_i(NA) = (1 - t) \cdot w_i + t \cdot \frac{500 + 100 + 100}{3}$$

where t is the tax rate selected by a simple majority within a group ($t \in \{0.3,0.6\}$), and w_i ($w_U = 100, w_S = 500$) is the pre-tax income obtained by subject i (0 ECUs if the task is not completed). Note that the tax revenue is distributed equally among all group members.

If the skilled worker decides to avoid taxation, the next function gives the payoffs:

$$u_S(A) = 500 - (1-\alpha)\cdot t \cdot 500 - c + t \cdot \frac{(1-\alpha)\cdot 500 + 100 + 100}{3}$$

$$u_U(A) = (1-t)\cdot 100 + t \cdot \frac{(1-\alpha)\cdot 500 + 100 + 100}{3}$$

where α is the percentage of income that the skilled worker avoids in taxes ($\alpha = 0.7$), and c is the cost of avoiding taxation ($c \in \{60,130\}$).

At the end of the experiment, participants answered a questionnaire that included gender, age, studies, zip code, political ideology, income, risk aversion (Bomb Risk Elicitation Task by Crosetto and Filippin, 2013), Cognitive Reflection Test (Toplak *et al*. 2014), reasons for most voted tax rate and tax avoidance (for further details on these questions see Online Appendix). The answers to the questionnaire enabled us to control for the heterogeneity of the subjects.

We paid out one randomly selected period among the 15 periods. Every ECU earned by subjects was converted into Euros at an exchange rate of 1€ = 18 ECUs. All previous information was available to all participants. On average, each person received about 15.37€ (including a 3€ show-up fee) for a 90-minute session.

We summarize the main features of our four treatments in Table 1.

Table 1. Summary of experimental design.

Treatment	*Tournament*	*Low tax rate*	*High tax rate*	*Unskilled wage*	*Skilled wage*	*Proportion of income avoided*	*Avoidance cost*
T_130	Yes	0.3	0.6	100	500	0.7	130
T_60	Yes	0.3	0.6	100	500	0.7	60
R_ 130	No	0.3	0.6	100	500	0.7	130
R_ 60	No	0.3	0.6	100	500	0.7	60

2.3. Hypothesis.

We base our experiment on the basic model of redistributive politics developed by Jiménez-Jiménez *et al.* (2025). In this model, the characterization of equilibria depends on the cost of tax avoidance. When the cost is high ($c \in [70,140]$), as in our treatments T_130 and R_130, the cost of avoiding taxes exceeds the benefit if the implemented tax rate is the lower one. In this case, the Subgame Perfect Nash equilibrium implies that unskilled workers vote for the low tax rate and skilled workers do not avoid taxes (see Proposition 2 in Jiménez-Jiménez *et al.*, 2025). When the cost of tax avoidance is low ($c < 70$), as in our treatments T_60 and R_60, the Subgame Perfect Nash equilibrium is that skilled workers avoid taxes and unskilled workers vote for the high tax rate, which are their dominant strategies, respectively (see Proposition 3 in Jiménez-Jiménez *et al.*, 2025). However, this model makes no assumptions about how agents become skilled or unskilled.

Regarding preferences over taxes depending on how agents' income is determined, Alesina and Angeletos (2005) define two types of equilibria: US-type equilibrium, in which agents' income is determined by talent and effort, and UE-type equilibrium, in which agents' income is determined by luck. In the former, a low tax rate is implemented, while in the latter, a high one is implemented. Consequently, the US-type equilibrium produces a more unequal economy. These results were confirmed by the experiment in Jiménez-Jiménez *et al.* (2020), provided that the inequality between wages is high enough, as is the case with the parameters in the current experiment.

We can utilize the results of Jiménez-Jiménez et al. (2025) and Alesina and Angeletos (2005) to formulate hypotheses on voting behavior, tax avoidance decisions, and inequality.

First, we analyze the voting behavior. Regardless of the cost of tax avoidance, we should expect that agents vote more for the low tax rate in the Tournament treatments than in the Random treatments. Additionally, considering the equilibrium outcomes for each possible cost of tax avoidance, unskilled workers, who are the decisive voters, will vote for the low tax rate when the cost is high and for the high tax rate when the cost is low.

Hypothesis 1 (voting):

a. For any cost of tax avoidance, skilled workers are more likely to vote for the low tax rate (t = 0.3) in the Tournament treatments (T_130, T_60) compared to the Random treatments (R_130, R_60).

b. Similarly, for any cost of tax avoidance, unskilled workers are more likely to vote for the low tax rate (t = 0.3) in the Tournament treatments (T_130, T_60) compared to Random treatments (R_130, R_60).

c. In both the Tournament and Random treatments, unskilled workers are more likely to vote for the low tax rate (t=0.3) when the cost of tax avoidance is high (c=130) than when the cost is low (c=60).

When considering the tax avoidance decisions of skilled workers in equilibrium, it is important to note that if the cost of tax avoidance is high, they are unlikely to avoid taxes when the low tax rate is implemented. This is more likely to happen in the Tournament treatments compared to the Random treatments, where, according to the previous hypothesis, the low tax rate is more frequently voted. Conversely, when the cost of tax avoidance is low, skilled workers will tend to avoid taxes, as this behavior represents a dominant strategy in the model.

Hypothesis 2 (tax avoidance):

a. In both the Tournament and Random treatments, skilled workers are more likely to avoid taxes when the cost of tax avoidance is low (c = 60) compared to when the cost is high (c = 130).

b. When the cost of tax avoidance is high (c=130), skilled workers will avoid taxes less in the Tournament treatment (T_130) than in the Random treatment (R_130).

c. When cost of tax avoidance is low (c=60), skilled workers will avoid taxes equally in both the Tournament and Random treatments.

Next, using Hypothesis 1 (H1) and Hypothesis 2 (H2) we examine the equilibria. There are two types of equilibria to consider: 1) high tax rate and tax avoidance, and 2) low tax rate and no tax avoidance. According to H1 and H2, we expect workers to reach equilibrium 1 more frequently in the Random treatments than in the Tournament treatments. Conversely, we expect they reach equilibrium 2 more often in the Tournament treatments than in the Random treatments. This is because if the cost of tax avoidance is

low, H1a and H1b increase the likelihood of workers choosing equilibrium 1 in the Random treatments. However, if this cost of tax avoidance is high, H1a, H1b, and H2b suggest that the likelihood of reaching equilibrium 2 will rise in the Tournament treatments.

Hypothesis 3 (equilibrium):

a. When the cost of avoidance is high (c=130), the equilibrium with a low tax rate implemented and no tax avoidance is more frequently reached in the Tournament treatment than in the Random treatment.

b. When the cost of tax avoidance is low (c=60), the equilibrium with a high tax rate is implemented, and tax avoidance is more frequently reached in the Random treatment than in the Tournament treatment.

Finally, using H3a and H3b, we study income inequality after tax redistribution. When the cost of tax avoidance is high, we expect a higher frequency of votes for the low tax rate in the Tournament treatments compared to the Random treatments. This is likely to result in greater after-tax income inequality. Conversely, we also expect a lower level of tax avoidance in the Tournament treatments, leading to reduced after-tax income inequality. The final outcome for income inequality will depend on which of these two effects is stronger. According to the findings of Jiménez-Jiménez *et al.* (2025), the low tax rate is frequently implemented in the Tournament treatments (80%). However, tax avoidance levels at this low tax rate are minimal (4%) due to the high cost. Therefore, we expect the dominant effect to be the tax rate implemented, resulting in higher ex-post income inequality in the Tournament treatments. When the cost of tax avoidance is high, we still expect the same two effects as before: a higher frequency of votes for the low tax rate and lower levels of tax avoidance in the Tournament treatments compared to the Random treatments. However, in this case, we believe that the dominant effect will be related to tax avoidance decisions rather than the tax rate implemented. Given the low tax avoidance cost and in light of the findings from Jiménez-Jiménez *et al.* (2025), we expect a higher frequency of the high tax rate implemented (48%), along with very high levels of tax avoidance at this high tax rate (85%).

Hypothesis 4 (after-tax income inequality):

a. When the cost of tax avoidance is high (c=130), after-tax income inequality is higher in the Random treatment than in the Tournament treatment.

b. When the cost of tax avoidance is low (c=60), after-tax income inequality is higher in the Tournament treatment than in the Random treatment.

3. Results

In this section, we will test the previous hypotheses using data collected from our laboratory experiment. We will employ nonparametric statistics at an individual level to ensure independence, calculating the average of all observations across the fifteen periods. They will reflect Mann-Whitney one-tailed tests unless otherwise stated. First, we will analyze voting behavior and the implemented tax rate. Second, we will examine tax avoidance decisions. Additionally, we will study payoffs and after-tax income inequality. Finally, we will perform some regressions to account for the panel data structure and to use the information gathered from the post-questionnaire. It is important to note that the objective of this study is to compare treatments where pre-tax income is based on meritocracy (Tournament) with those where it is determined by luck (Random), while keeping the cost of tax avoidance constant.

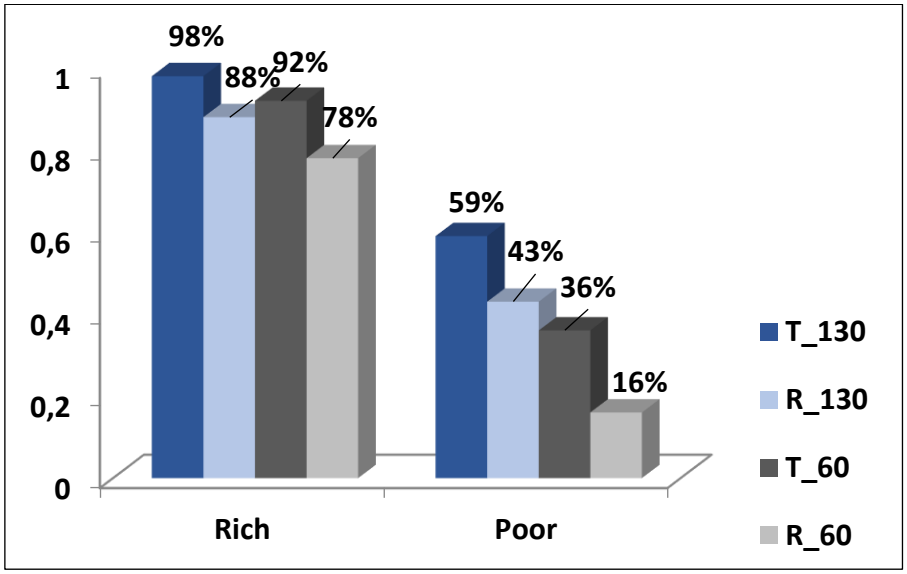
Before presenting the descriptive statistics, we need to check whether differences in individual behavior between treatments might be due to variations in the ability of the real effort task. To do this, we will consider the average number of correct tables submitted by subjects in Phase 1. Our findings indicate that the difference in skill distributions between treatments is statistically significant (minimum $p = 0.007$), especially if we consider only "skilled" workers observations (maximum $p < 0.001$). This result is not surprising, as "skilled" workers in the Random treatments are selected by chance, whereas in the Tournament treatments, "skilled" workers are those who demonstrate the highest ability in the task. We will incorporate skill as an explanatory variable in our econometric analysis to account for this difference.

Voting decisions

Next, we will analyze individual behavior across treatments. Figure 3 presents the average percentage of votes for the low tax rate (t = 0.3) for each type of subject in each treatment. From now on, we will label skilled workers as "Rich" and unskilled workers as "Poor" in the graphs and tables.

We observe that, although skilled workers are less likely to vote for the low tax rate in all the Random treatments compare to the Tournament treatments, this difference is only significant ($p = 0.004$) when the tax avoidance cost is high,. Then, Hypothesis 1a is only supported for the cost level of $c = 130$. Unskilled workers also vote less frequently for the low tax rate when there is no meritocracy and the difference is significant ($p = 0.013$ *and* $p = 0.015$, for $c = 130$ and $c = 60$, respectively). Consequently, Hypothesis 1b is supported. Finally, when we compare unskilled workers' voting decisions based on the tax avoidance cost, we find that a lower cost (c = 60) corresponds to a decreased likelihood of voting for the low tax rate in both scenarios ($p < 0.001$ *and* $p = 0.004$, for Tournament and Random, respectively). Thus, Hypothesis 1c is also supported.

Figure 3. Average frequency of votes for the low tax rate

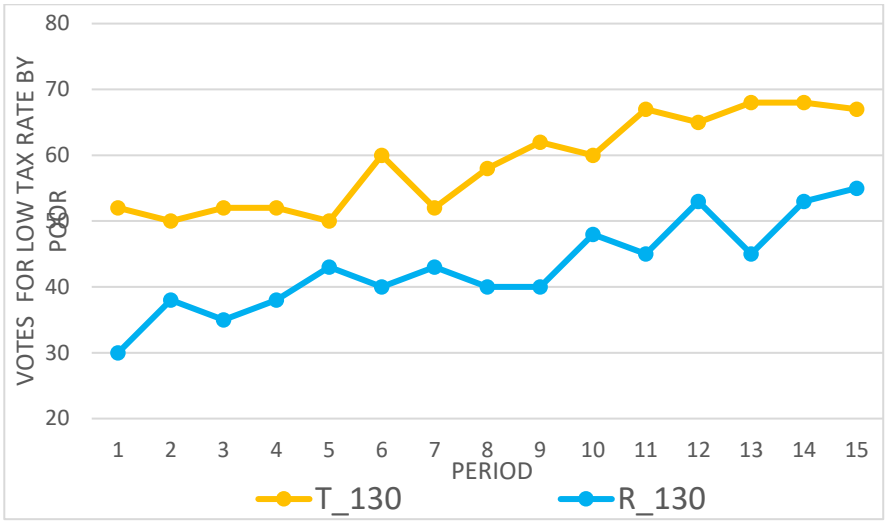


Note: In all Tournament treatments, there are 30 Rich and 60 Poor; in all Random treatments, there are 20 Rich and 40 Poor.

Figures 4 and 5 illustrate the evolution of the average frequency of votes for the low tax rate among unskilled workers, when the cost of tax avoidance is 130 and 60, respectively. In Figure 4, we can see that while the trend is increasing in both treatments (τ between *0.091 and 0.113*, maximum $p = 0.005$), votes for the low tax rates are consistently higher in all rounds when meritocracy is applied compared to the Random

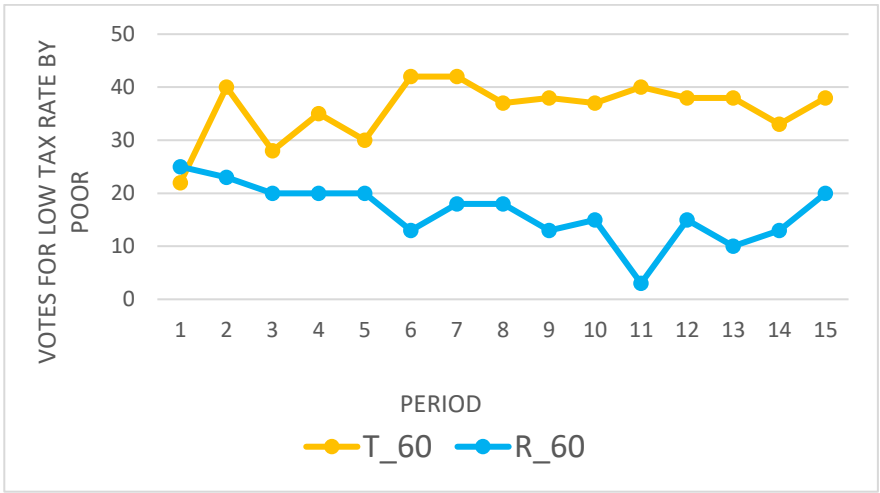
treatments.[3] This suggests that the trend is not much affected by meritocracy when the cost of tax avoidance is high.

Figure 4. Evolution on time of votes for the low tax rate by Poor (c = 130)



When the cost of tax avoidance is low (see Figure 5), meritocracy appears to lead to a slight upward trend in votes for the low tax rate ($\tau = 0.051$, $p = 0.051$). In contrast, when the pre-tax income is determined by luck, the trend shows a downward trajectory ($\tau = -0.143$, $p < 0.001$). This suggests that meritocracy shifts the trend (toward a positive one) on the voting behavior of unskilled workers in favor of lower tax rates. We will further analyze these results in the regression analysis, where we will examine voting decisions alongside tax avoidance behavior.

Figure 5. Evolution on time of votes for the low tax rate by Poor (c = 60)



[3] All test trends performed in this section are Kendall's Tau tests, since this test presents a robust estimator against outliers and non-normality.

Result 1 (Voting decisions).

a) Skilled workers are more likely to vote for the low tax rate when meritocracy is present, but only significantly when the cost of tax avoidance is high. Therefore, H1a is only partly supported.

b) Unskilled workers vote significantly more frequently for the low tax rate when meritocracy is present. Therefore, H1b is supported.

*c) **Unskilled workers** vote significantly more frequently for the low tax rate when the cost of tax avoidance is the low. Therefore, H1c is supported.*

Implemented tax rate

The implemented tax rate is mainly determined by voting decisions, but the distribution of votes among different groups also plays a significant role. For unskilled workers, the average frequency of votes for the low tax rate among unskilled workers aligns with the implemented tax rate as follows: T_130 (80%), R_130 (64%), T_60 (52%) and R_60 (23%). As a result, the low tax rate is implemented significantly less frequently in the Random treatments compared to the Tournaments treatments (maximum $p = 0.032$). Interestingly, this difference is quite substantial (nearly double) when the cost of tax avoidance is low.

Tax avoidance

Table 2 presents the average frequency of tax avoidance among skilled workers. As expected, tax avoidance occurs more frequently when the cost of tax avoidance is low compared to when it is high (maximum $p < 0.001$). Therefore, Hypothesis 2a is supported. When the tax avoidance cost is high (c = 130), we observed that tax avoidance is significantly more likely in the absence of meritocracy ($p = 0.038$). Thus, Hypothesis 2b is also supported. Conversely, when the tax avoidance cost is low (c = 60), the opposite effect is observed: tax avoidance is significantly more likely meritocracy is present ($p = 0.008$). Consequently, Hypothesis 2c is not supported. Finally, in Table 2, we observe that tax avoidance decisions vary significantly based on the tax rate implemented. Skilled workers tend to avoid taxes more frequently when the implemented tax rate is high, suggesting that they may be responding to the votes of unskilled workers in favor of a lower tax rate. The only exception occurs when the cost of tax avoidance is low and there is no meritocracy. This no-reciprocity result jointly with the huge difference in the frequency of the low tax rate implemented (52% vs 23%) in the Tournament compared

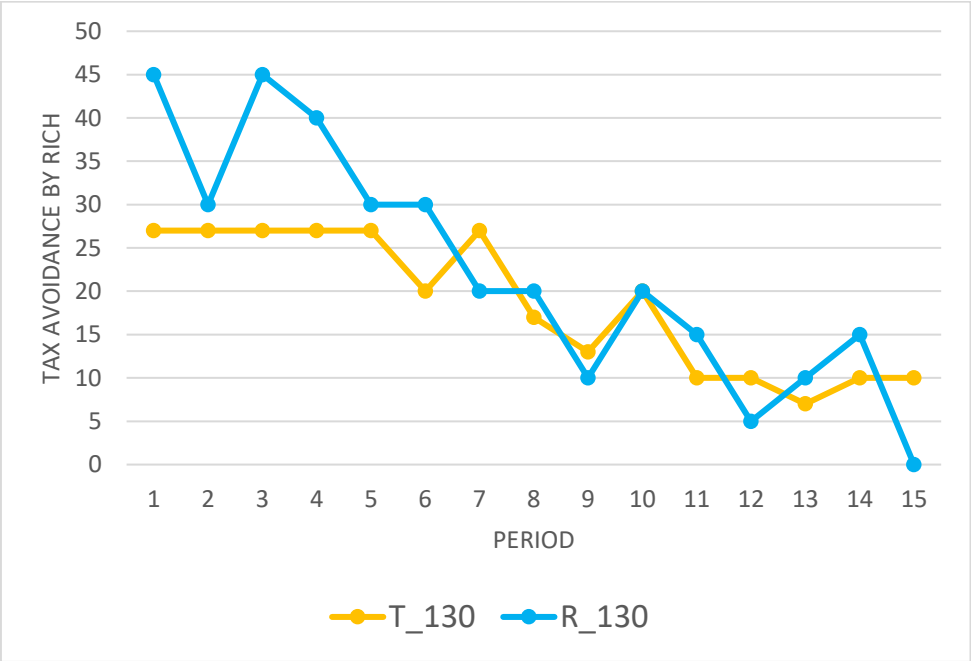
to the Random treatments could explain why we do not find support for Hypothesis 2c. We will explore this result further in the econometric analysis.

Table 2. Average levels of tax avoidance across treatments

	All	Low tax rate winner (0.3)	High tax rate winner (0.6)	N
T_130	18%	4%	76%	30
R_ 130	22%	6%	50%	20
T_60	52%	22%	85%	30
R_ 60	86%	87%	86%	20

Figures 6 and 7 plot the evolution of the average frequency of tax avoidance over time across different treatments, with the cost of tax avoidance of 130 and 60, respectively. In Figure 6, we notice that the trends across all treatments are quite similar and show a decreasing pattern (τ between *-0.076* and *-0.179*, maximum $p = 0.041$). Therefore, like unskilled workers' voting decisions, it appears that meritocracy does not influence this downward trend.

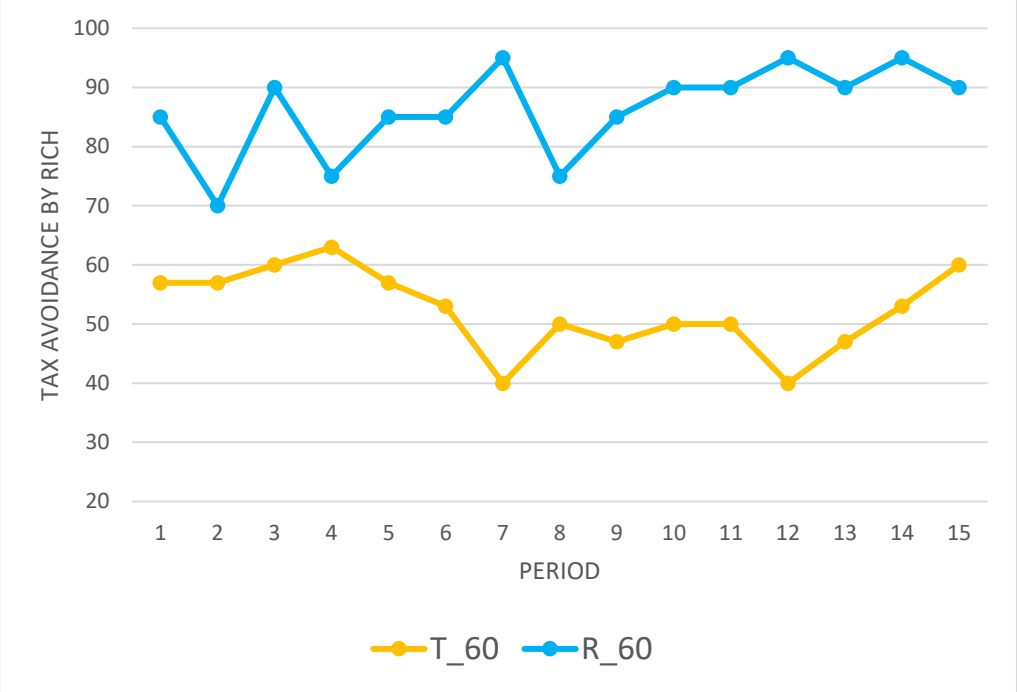
Figure 6. Evolution on time of tax avoidance levels by Rich (c = 130)



When we examine treatments with a low cost of tax avoidance (as shown in Figure 7), we find that meritocracy leads to a decreasing trend in tax avoidance, while luck leads to an increasing trend (τ = *-0.264*, $p < 0.001$, and τ = *0.212* , $p < 0.001$, for Tournament

and Random treatments, respectively). This indicates that meritocracy shifts the trend of tax avoidance decisions from increasing to decreasing when the cost of tax avoidance is low.

Figure 7. Evolution on time of tax avoidance levels by Rich (c = 60)



Result 2 (Tax avoidance decisions).

a) Skilled workers avoid taxes significantly more frequently when the cost of tax avoidance is low compared to when it is high, regardless of the presence of meritocracy. Therefore, H2a is supported.

b) When the cost of tax avoidance is high, skilled workers avoid taxes significantly more frequently when meritocracy is present compared to when it is not. Therefore, H2b is supported.

c) When the cost of tax avoidance is low, skilled workers avoid taxes significantly less frequently when meritocracy is present compared to when it is not. Therefore, H2c is ***not*** *supported.*

Before-tax and after-tax payoffs

As explained in the experimental design, the before-tax payoffs are 500 ECUs for skilled workers and 100 ECUs for unskilled workers (except in cases where a subject did not sum correctly at least one table, in which case the payoff is 0 ECUs). After-tax payoffs are influenced by the tax rate implemented and the levels of tax avoidance. Table 3 presents the payoffs (both before- and after-tax redistribution) for skilled and unskilled workers, as well as the share of the sum of payoffs within groups, specifically for unskilled workers, in each treatment.

Table 3. Average payoffs before and after taxes and redistribution by treatment.

	Payoffs before-tax			**Payoffs after-tax**		
	Rich	**Poor**	**Share poor**	**Rich**	**Poor**	**Share poor**
T_130	500	99	0.14	427.5	135.6	0.19
R_ 130	597.1	99.7	0.13	462.3	118.3	0.17
T_60	500	99.3	0.14	446.5	125.8	0.18
R_ 60	498.5	99	0.14	420.2	139.6	0.20

When the cost of tax avoidance is high, meritocracy leads to significantly lower earnings for skilled workers ($p = 0.021$). Conversely, when the cost of tax avoidance cost is low, meritocracy results in higher earnings, though this is not statistically significant ($p = 0.015$). Additionally, unskilled workers earn more under meritocracy when the cost of tax avoidance is high, but this result is not statistically significant ($p = 0.097$). Conversely, unskilled workers earn less under meritocracy when the cost of tax avoidance is low ($p = 0.001$). Overall, meritocracy reduces after-tax income inequality when the cost of tax

avoidance is high but increases after-tax income inequality when the cost is low. These findings support Hypotheses 4a and 4b, respectively.

Result 3 (After-tax income inequality).

a) Meritocracy reduces after-tax income inequality when the cost of tax avoidance cost is high (c = 130). Therefore, Hypothesis 4a is supported.

b) Conversely, meritocracy increases after-tax income inequality when the cost of tax avoidance is low (c = 60). Therefore, Hypothesis 4b is supported.

Econometric analysis

In this section, we will conduct an econometric analysis to check the robustness of our results, taking into account the panel data structure of our sample. It is important to note that by averaging the observations across the 15 rounds in the previous statistic inference, we may lose significant information. Our analysis will control for heterogeneity, specifically individual characteristics that may influence decisions between treatments. This aspect is particularly important in laboratory experiments that involve reduced sample sizes. First, we will utilize a Random Effects (RE) Logit model, where the dependent variable is the probability of unskilled workers voting for the low tax rate in the current period. This model will help us to analyze the effects of meritocracy and tax avoidance on voting decisions. Next, we will apply the same model, but this time the dependent variable will be the probability of tax avoidance among skilled workers in the current period. This model will enable us to assess the impact of meritocracy and the implemented tax rate on tax avoidance decisions.

Table 4 presents the coefficients (marginal effects) of two RE logit regressions on the probability of voting for the low tax rate in the current period. In specification (1), we compare the T_130 and R_130 treatments, while in specification (2), we compare the T_60 and R_60 treatments. The explanatory variables include the interactions of *avoidance in t-1* (a dummy which is 1 if there were tax avoidance in the previous period and 0 otherwise) and all the four treatment dummies (*T_130, R_130, T_60, R_60*), a gender dummy that equals 1 if the agent is a woman (*Female*), the number of correct tables summed in the Tournament Phase (*Skill*), an index for risk lovers (*Risk lover*), the Cognitive Reflection test index (*CRT index*), and treatment dummies for the meritocracy treatments, T_130 and T_60 (*Meritocracy dummy*). We cluster errors at an individual level.

In line with the statistic inference, we observe that the low tax rate is more frequently voted when meritocracy is present (see the coefficient of Meritocracy dummy positive and significant in specifications (1) and (2) on Table 4). This supports Hypothesis 1b. Regarding the effect of tax avoidance, we observe that when meritocracy is present, the higher the tax avoidance, the less likely is that unskilled workers vote for the low tax rate (see the coefficients of Avoidance in t-1*T_130/60 negative and significant in both specifications). However, in the absence of meritocracy, the effect of tax avoidance on voting for the low tax rate seems to vanish (see the coefficients of Avoidance in t-1*R_130/60 not significant in both specifications).

Table 4. RE Logit on Poor voting for the low tax rate

VARIABLES	(1) **T_130 vs. R_130**	(2) **T_60 vs. R_60**
Avoidance in t-1*T_130	**-0.710****	-
	(0.352)	
Avoidance in t-1*R_130	0.399	-
	(0.290)	
Avoidance in t-1*T_60	-	**-1.580*****
		(0.273)
Avoidance in t-1*R_60	-	-0.187
		(0.401)
Skill	0.062	-0.010
	(0.067)	(0.043)
Female	0.350	-0.431
	(0.639)	(0.436)
Risk lover	-0.025**	0.008
	(0.013)	(0.009)
CRT index	-0.253	-0.205
	(0.360)	(0.195)
Period	0.132***	-0.025
	(0.022)	(0.020)
Meritocracy dummy	**0.390*****	**0.546*****
	(0.141)	(0.143)
Constant	1.383	4.306***
	(1.389)	(1.506)
N	1,400	1,400

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 5 presents the coefficients (marginal effects) of two RE logit regressions on the probability of tax avoidance in the current period. Each specification maintains the same comparison of treatments as shown in Table 5. The explanatory variables are identical to those in Table 4, with the exception of the interaction variables. In Table 5, we consider the interaction between *low tax winner in t* (a dummy variable equal to 1 if

the winner tax rate is low one in the current period and 0 otherwise) and the four treatment dummies.

In Table 5, after controlling for heterogeneity and the impact of the winner tax rate, we observe that a negative effect of meritocracy on tax avoidance levels is significant only when the cost of tax avoidance is high (see the coefficient of the meritocracy dummy negative and significant in specification (1)). Thus, Hypothesis 2b is again supported. However, contrary to the statistic inference, when the cost of tax avoidance is low, the negative effect of meritocracy levels disappears and instead is influenced by the tax rate implemented (see the coefficient of the meritocracy dummy not significant in specification (2)). Consequently, Hypothesis 2c is now supported. Additionally, the

Table 5. RE Logit on the probability of tax avoidance

VARIABLES	(1) **T_130 vs. R_130**	(2) **T_60 vs. R_60**
Low tax winner in t* T_130	**-5.438*** **	-
	(0.705)	
Low tax winner in t* R_130	**-3.124*** **	-
	(0.445)	
Low tax winner in t* R_60	-	**-3.873*** **
		(0.514)
Low tax winner in t* R_60	-	-0.082
		(0.509)
Skill	-0.012	0.012
	(0.074)	(0.089)
Female	1.012	0.565
	(0.676)	(1.119)
Risk lover	0.007	-0.012
	(0.014)	(0.029)
CRT index	-0.024	0.219
	(0.295)	(0.501)
Period	-0.132***	0.043
	(0.037)	(0.033)
Meritocracy dummy	**-0.412** **	-0.180
	(0.189)	(0.332)
Constant	3.963	0.718
	(2.579)	(4.726)
N	750	750

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

likelihood of tax avoidance decreases when the low tax rate is implemented, except in the R_60 treatment (see in all specifications the coefficient of the interaction of the low tax winner in t with all treatment dummies). This suggests that skilled workers respond favorably to unskilled workers who vote for the low tax rate by reducing their levels of tax avoidance, particularly when the cost of tax avoidance is high and meritocracy is

present. This effect is significantly higher with meritocracy (maximum $p = 0.005$, when testing the difference of the coefficients of the interactions between the meritocracy and the random treatments). In fact, we observe this "reciprocity" result across all treatments except in R_60. It is not surprising that skilled workers decrease their levels of tax avoidance when the low tax rate is implemented, especially when the cost of tax avoidance is high, as their payoffs are greater if they do not avoid taxes.[4] Conversely, when the cost of tax avoidance is low, the dominant strategy (regardless of the tax rate implemented) is to avoid taxes. Therefore, it seems that when skilled workers were selected through merit (T_60), they exhibit preferences for fairness in the form of reciprocity, which are absent when skilled workers are chosen by chance (R_60).

In summary, our findings indicate that tax avoidance decisions only influence the voting behavior of unskilled workers in a meritocratic environment. Specifically, unskilled workers seem to increase their votes for the low tax rate to reciprocate a decrease in tax avoidance levels. However, the tax rate implemented itself affects tax avoidance decisions regardless of meritocracy (with the exception of R _60) in the sense that, skilled workers seem to decrease their tax avoidance levels to reciprocate a more frequent implementation of the low tax rate.

Result 4 (Interaction voting-tax avoidance)

a) When meritocracy is present, the frequency of tax avoidance has a negative impact on the likelihood of unskilled workers voting for the low tax rate. This effect disappears in the absence of meritocracy.

b) When the low tax rate is implemented more frequently, the likelihood of tax avoidance decreases, regardless of meritocracy, except when the cost is low (c = 60) in which case this effect fades away.

6. Concluding Remarks

In this paper, we analyze how meritocracy can influence income redistribution choices in a complex context where tax avoidance is feasible. Our study is built on the

[4] Note that when the cost = 130 and the low tax rate is implemented, assuming that all payoffs are strictly positive within a group, Rich payoffs are 420 if they avoid taxes and 360 I the don´t.

basic dynamic model of redistributive politics presented by Jimenez-Jiménez *et al.* (2025). In this model, both tax avoidance and tax rates are considered endogenous variables, and the equilibria depend on the costs associated with tax avoidance. When tax avoidance is relatively easy, the equilibrium consists of a high tax rate selected by majority voting and the presence of tax avoidance. Conversely, if the cost of tax avoidance is high, the model predicts the choice of a low tax rate and no tax avoidance. We conduct a laboratory experiment to test whether these theoretical predictions are affected by whether the initial pre-tax income inequality arises from luck or merit.

Our results are as follows. First, the theoretical predictions related to low costs of tax avoidance (i.e., a high tax rate and tax avoidance) are more frequently observed in those treatments where luck determines pre-tax income inequality compared to the treatments where merit is the source of pre-tax income. Second, theoretical predictions regarding high costs of tax avoidance (i.e., a low tax rate and no tax avoidance) align more closely with the evidence in treatments where merit determines pre-tax income inequality compared to treatments where luck is the source of pre-tax income. Consequently, we find that meritocracy is more effective in reducing income inequality in economies where the costs of tax avoidance is high. Conversely, in economies where tax avoidance is easier, the belief that luck, rather than merit, is the main contributor to pre-tax income inequality supports efforts for income redistribution and helps to reduce income inequality.

Our findings suggest that in countries where there is a there is a strong belief that merit is the primary determinant of future earnings, such as the United States (Alesina and Angeletos, 2005), it is crucial to invest in tax enforcement (making tax avoidance more costly) to reduce income inequality. Conversely, in countries where individuals predominantly view luck as the main factor contributing to earnings inequality, we recommend a different strategy: relaxing tax enforcement and making tax avoidance easier.

We are aware that our study is not free of caveats. Our design does not consider the effect of taxes on productivity. There are other papers that incorporate this feature in their experimental designs (see for instance Jiménez-Jiménez *et al.*, 2020, or Sausgruber *et al*., 2021, among others). Jiménez-Jiménez *et al.* (2020) in a very similar experimental design analyzes the effect of the choice of the tax rate in productivity. They do not find a significant effect of the tax rate on efficiency in production. All these papers do not consider the possibility of tax avoidance.

We acknowledge that our study has some caveats. Our design does not account for the impact of taxes on productivity. There are other studies that address this aspect in their experimental designs (for example, Jiménez-Jiménez *et al.*, 2020, and Sausgruber *et al.*, 2021, among others). In a similar experimental setup, Jiménez-Jiménez *et al.* (2020) examine the effect of varying tax rates on productivity and find no significant impact of tax rates on production efficiency. However, these studies do not take into consideration the potential for tax avoidance.

While preparing this work, the authors utilized Grammarly Pro to receive suggestions on spelling, grammar, and clarity. After using this tool, the authors reviewed and edited the content as needed. We take full responsibility for the content.

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Appendix A: Instructions for Tournament treatment with high cost of tax avoidance.[5]

INSTRUCTIONS (translated from Spanish)

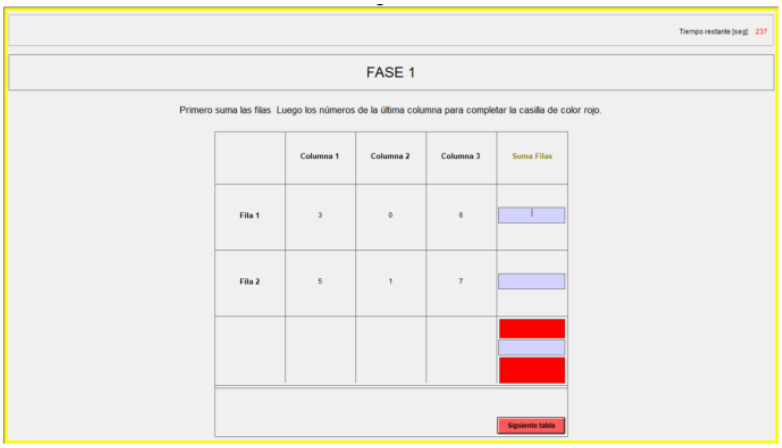
The purpose of this experiment is to study how individuals make decisions in certain contexts. The instructions are simple, and if you follow them carefully, you will receive an amount of cash at the end of the experiment in a confidential way since no one will know the payments received by the rest of the participants. You can ask us any questions you have at any time by raising your hand first. Other than those questions, any kind of communication between you is forbidden and will be subject to immediate exclusion from the experiment.

This experiment consists of two phases.

Phase 1

In the first phase, you will have to perform an addition-based task for a total time of 4 **minutes**. The task will consist of adding 6 numbers from a table of 2 rows and 3 columns. The difficulty of the tables will be the same for all participants. Before writing on the screen your final answer (the total sum of all the numbers in the table), you will have to complete the 2 cells corresponding to the sum of each row. You will only be able to write the final answer of the table (red box in Figure 1) once you have completed the 2 previous cells.

Figure 1



[5] In the instructions of the Random Treatments the Phase 1 is replaced by the following paragraph: "In this experiment there are going to be 2 groups of participants: group A and group B. At the end of the **4 minutes**, one third of the participants will be randomly assigned **Type A**, while the remaining two thirds will be assigned **Type B**. Type A participants will receive in the second phase of the experiment **500 points** if they correctly perform the task asked of them. While Type B participants will receive in the second phase **100 points** if they correctly perform the task."

The use of a calculator or any electronic device is prohibited. If you use any of them, you will be expelled from the experiment and you will not receive any payment.

When the **4 minutes** are up, the number of correctly added tables for each participant in this session will be calculated. **The number of correct tables will depend only on the result written in the red box** (the other cells will help you to calculate the final result, but will not be taken into account). The one third of participants with the best results will be assigned **Type A** while the remaining two thirds will be assigned **Type B**. Type A participants will receive in the second phase of the experiment **500 points** if they correctly perform the task asked of them. While Type B participants will receive in the second phase **100 points** if they correctly perform the task. In case of a tie in the number of correct sums, the tied participants will perform the same task again for **1.5 minutes**. If there is a tie again, the tie-breaker will be broken randomly among all tied participants.

Phase 2

In the second phase you will be randomly paired with two other people in the room to form a group of three, so that in each group there will be **one type A** and **two type B participants**. It is important for you to know that during all the rounds of this phase **your group will always be the same**. This means that you will be paired with the same people during all the rounds.

The second phase will consist of several rounds of a total duration of **2 minutes** each. During this time, you will have to perform a **task** consisting of adding up the numbers in a table (similar to Phase 1). If you perform the task correctly, you will get a certain fixed number of points (depending on your type). These points will be **taxed** and the total tax collected in your group **will be divided equally** among all members of the group.

At the beginning of each round, two taxes will be presented. You will have to choose one of them. The most voted within the group will be the one that will finally be applied in this round. Note that as the groups are formed by 3 people there is no possibility of a tie

in the voting. Before starting the 2 minutes of the total time of the round, the tax chosen by the majority of the group will be announced. The **first two rounds will be test rounds** to familiarize you with the voting process, so they will not count towards your winnings.

At the end of each round there will be an additional stage for type A participants. If you are the **type A participant** in your group of three people, you have to decide whether to **declare all the winnings** obtained in this round or to **declare only 30% of the winnings in exchange for paying a cost.** For type A participants, the tax chosen in your group will only be applied to the part of the winnings you have decided to declare. For type B participants, the tax chosen in their group will be applied to all winnings.

Your winnings in each round

Your winnings in a round will be determined as follows:

- **STEP 1** (**Earnings before tax).** If you are type A, you will earn 500 points if you correctly complete **at least one addition table** and 0 points otherwise. If you are type B, you will earn 100 points if you correctly complete **at least one addition table** and 0 points otherwise.

- **STEP 2** (**Payment of taxes**). For the points obtained in STEP 1 you must **pay taxes**.
    - If you are **type A**, your payment will depend on the decision you made in the additional stage of the round.
        - **If you have decided to declare all the points obtained in STEP 1** and you have completed the task correctly, you will pay $t \cdot 500$ (if you have failed to complete the task you will pay 0).
        - **If you have decided to declare 30% of the points obtained in STEP 1** and you have completed the task, you will pay $t \cdot 0.3 \cdot 500$ (if you have failed to complete the task you will pay 0), being t the tax chosen by majority vote in the voting process in this round and 0.3 the proportion you have decided to declare. As you have decided not to declare all the points, you will also have to pay a cost of 130 points.

- If you are **type B** and you have correctly completed the task you will pay $t \cdot 100$ (otherwise you will pay 0), being t the tax chosen by majority vote in the voting process in this round.

- **STEP 3 (The share of the total collection you receive).** The **total points collected with the tax** in your group will be divided equally among the 3 members of your group. The total collection will depend on your group's type A decision in the additional stage of the round.
  - **If in STEP 2 Type A has decided to declare all the taxes obtained in STEP 1**, and we assume that everyone performed the task correctly, the total collection will be $500 \cdot t + 100 \cdot t + 100 \cdot t$. Therefore, each member of the group will receive $\left(\frac{t \cdot 500 + t \cdot 100 + t \cdot 100}{3}\right)$.
  - **If in STEP 2 Type A has decided to declare 30% of the points obtained in STEP 1,** and we assume that everyone performed the task correctly, the total collection will be $[t \cdot 0.3 \cdot 500 + t \cdot 100 + t \cdot 100\ ]$. Therefore, each member of the group will receive $\left(\frac{t \cdot 150 + t \cdot 100 + t \cdot 100}{3}\right)$.[6]

The points you will earn in each round will be your pre-tax earnings (STEP 1) minus the taxes paid (and an additional cost in case you decide not to declare all the points earned) (STEP 2) plus your share of the tax collection of your group (STEP 3). These earnings can be expressed as follows (assuming that all group members have completed at least one correct table):

- If **the type A member of the group has decided to declare all the points obtained in STEP 1, then the group member must declare all the points obtained in STEP 2.**

$$Ganancias\ (tipo\ A) = 500 - t \cdot 500 + \left(\frac{t \cdot 500 + t \cdot 100 + t \cdot 100}{3}\right)$$

[6] If in STEP 1 you scored 0 points, the taxes you will have to pay in STEP 2 will be 0 points. However, in STEP 3 you will receive one third of your group's collection.

$$Ganancias\ (tipo\ B) = 100 - t \cdot 100 + \left(\frac{t \cdot 500 + t \cdot 100 + t \cdot 100}{3}\right)$$

- If **the type A member of the group has decided to declare 30% of the points obtained in STEP 1, the group member must declare 30% of the points obtained in STEP 2.**

$$Ganancias\ (tipo\ A) = 500 - t \cdot 150 - 130 + \left(\frac{t \cdot 150 + t \cdot 100 + t \cdot 100}{3}\right)$$

$$Ganancias\ (tipo\ B) = 100 - t \cdot 100 + \left(\frac{t \cdot 150 + t \cdot 100 + t \cdot 100}{3}\right),$$

Where *t* is the tax, 500 and 100 are the points obtained in STEP 1 by type A and type B participants, respectively, and 130 is the cost paid by A for deciding not to declare all the points obtained.

Example

Let's assume that the tax chosen by vote in your group in this round is 45%, i.e., $t = 0{,}45$ and that during the 2 minutes of the round type A has correctly added at least one board (500), and the two types B have correctly added at least one board (100). The winnings in this round will be:

STEP 1. Pre-tax earnings in points:

Type A = 500
Type B = 100

STEP 2. Tax payment in points.

- If **type A of the group has decided to declare all the points obtained in STEP 1, then the group's type A will declare all the points obtained in STEP 2.**

Type A = $t \cdot 500 = 0.45 \cdot 500 = 225$

Type B = $t \cdot 100 = 0.45 \cdot 100 = 45$

- **If type A has decided to declare 30% of the points obtained in STEP 1 for a cost of 130 points:**

  Type A =$[t \cdot 150] + 130 = 0{,}45 \cdot 150 + 130 = 197.5$ (the taxes you pay on the declared portion plus the cost of not declaring)

  Type B = $t \cdot 100 = (0{,}45) \cdot 100 = 45$

STEP 3. The portion of the total collection in points that each group member receives:

- If **type A of the group has decided to declare all the points obtained in STEP 1, the share of the total proceeds received by each member of the group will be:**

  Type A = Type B =$\left(\frac{t \cdot 500 + t \cdot 100 + t \cdot 100}{3}\right) = \left(\frac{0.45 \cdot 500 + 0.45 \cdot 100 + 0.45 \cdot 100}{3}\right) = 105$

- **If type A has decided to declare 30% of the points obtained in STEP 1 for a cost of 130 points, the share of the total proceeds received by each member of the group will be:**

  Type A = Type B $= \left(\frac{t \cdot 150 + t \cdot 100 + t \cdot 100}{3}\right) = \left(\frac{0.45 \cdot 150 + 0.45 \cdot 100 + 0.45 \cdot 100}{3}\right) = 52{,}5$

The final earnings in points of each round for each type will be the result of the points of STEP 1 (earnings before taxes) minus the points of STEP 2 (payment of taxes and an additional cost in case of deciding not to declare all the points obtained) plus the points of STEP 3 (sharing of tax collection). Therefore, the final earnings of a round in points will be:

- If **type A of the group has decided to declare all the points obtained in STEP 1:**

Type A $=500 - 225 + 105 = \mathbf{380}$

Type B $=100 - 45 + 105 = \mathbf{160}$

- **If type A has decided to declare 30% of the points obtained in STEP 1 for a cost of 130 points:**

Type A = $= 500 - 197{,}5 + 52{,}5 = \mathbf{355}$

Type B = $100 - 45 + 52{,}5 = \mathbf{107{,}5}$

At the end of each round, we will inform you of the payments obtained by each member of your group before taxes (remember that, if they have done the task correctly, the earnings before taxes will be 500 points for type A and 100 points for type B, otherwise they will be 0 points for all types). We will also inform you of the tax chosen by the majority in your group and your after-tax earnings, as well as the after-tax earnings of the other members of your group. Finally, if you are type B we will inform you if the type A of your group has decided to declare all the points earned in that round before tax or only a proportion p (less than 100% of them). We will also inform you what your winnings would have been if type A had made the alternative decision (declare everything if he has decided to declare a proportion p<100% or declare a proportion p<100% if he has decided to declare everything). In addition, you will have a calculator in case you want to do some calculations. At the end of the experiment, we will pay for your decisions for **1 round**, randomly chosen, not including the two test rounds.

To pay you for your decisions, we will convert your earnings in points to euros, using the rate of **18 points = 1€**. In addition to this payment, we will also pay you 3€ for your participation in this experiment. Your winnings will be received anonymously at the end of the experiment.

Next, before moving on to Phase 1 of the experiment, you will have to answer a short questionnaire to make sure that you have understood these instructions correctly.