Market Luck: Skilled-Biased Inequality and Redistributive Preferences

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Abstract

Structural transformations caused by globalization and technological change substantially alter the rewards for different skills in the labor market. This shift in the valuation of skills and the resulting skill-biased inequality are often determined by external market forces, a phenomenon we refer to as market luck. In meritocratic societies, inequalities are typically considered justifiable only when they stem from individual effort and not from factors beyond an individual's control. This raises the question of whether individuals perceive inequalities arising from market luck as fair. To address this question, we design an experiment where inequality between workers with different skills emerges because they are matched with buyers who require specific skills. Our findings show that individuals have a higher acceptance of inequalities arising from demand shocks, even when there are no discernible differences in effort and the source of inequality is entirely beyond the workers' control. We conduct additional experiments to disentangle the causal mechanisms. We document consistent findings in survey experiments designed around real-life situations, and we show that redistributive behavior in the experiment predicts support for real-world policies.

JEL Classifications: C91; D31; D63; D91; H23
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1 Introduction

A central driver of income inequality is market forces beyond individual control, a phenomenon we term *market luck*. Examples of market luck include macroeconomic developments such as globalization, skill-biased technological change, automation, and artificial intelligence. These profound structural transformations have exacerbated inequality by significantly altering the valuation of various skills within the labor market, diminishing the value of some while increasing the rewards for others (Autor and Dorn, 2013; Goos et al., 2014; Moll et al., 2022; Petrova et al., 2024).For example, Acemoglu and Restrepo (2022) find that 50-70% of the increase in US wage inequality can be attributed to the wage decline of workers heavily exposed to automation. Thus, it can be argued that market luck has played a pivotal role in the rise of skill-biased inequality.

The recent surge in global economic inequality has sparked significant political and academic debate about how governments and society should address this issue. Central to this discussion are the concepts of distributive justice and fairness (see, e.g., Almås et al., 2020; Gallup, 2022; Pew Research Center, 2020; Stantcheva, 2021). Understanding people's views on fairness and how these views influence political behavior and support for social welfare policies is, therefore, fundamental. The literature has shown that fairness views not only reflect preferences over final income distributions (Fehr and Schmidt, 1999; Fisman et al., 2007) but are also strongly influenced by the perceptions of the origins and processes behind income inequality (Alesina and Angeletos, 2005; Cappelen et al., 2007).

Skill-biased inequalities introduce a trade-off in fairness views. From the perspective of economic efficiency, skill-biased inequality might appear justified as higher rewards tend to reflect higher productivity. However, according to widely accepted principles of meritocracy, inequalities are only justified if they result from differences in individual effort and performance, not from factors outside individuals' control. The empirical literature typically draws a clear distinction between *luck* and *effort*, where people accept inequalities resulting from effort differences and reject those caused by pure luck (see, e.g., Almås et al., 2020; Cappelen et al., 2007, 2013; Durante et al., 2014). Therefore, we would expect meritocratic individuals to seek to eliminate inequality caused by market luck.

This trade-off raises the question of whether individuals perceive inequalities arising from market luck as fair. To answer this question, we conduct a pre-registered experiment and collect data on redistributive choices from nearly 2,000 subjects from the general U.S. population. To study the effect of market luck on fairness views, we need a setting that reflects real-world market forces where (i) labor supply (workers) meets demand (buyers) and (ii) income inequality arises due to exogenous shocks to market demand. For a clean identifica-

tion, we further have to iii) ensure that income inequality is purely determined by exogenous factors and not by (perceived) differences in the workers' effort and iv) control people's beliefs about the source of inequality. Our novel design fulfills all these conditions. In the main treatment of our experiment, the *market luck* treatment, we explicitly model a market's supply and demand sides by separately recruiting subjects to act as workers and buyers. Workers randomly differ in their skill type but provide the same amount of effort. On the other side, buyers choose their production and demand a specific type of skill. Randomly matching a pair of workers with different skills with a buyer determines whether a worker can meet the buyer's demand and consequently sell her labor. The fact that only one worker can sell her labor introduces income inequality between the two workers.

As our primary outcome, we measure the redistributive behavior of separately recruited subjects in the role of third-party spectators. These spectators are fully informed about the source of inequality, specifically the process that generated income differences between two workers. They can then decide how much income to redistribute between the two workers who earned unequal initial incomes. Using an impartial-spectator design allows us to obtain an objective measure of redistributive preferences, as the spectators have no conflict with material self-interest.[1] However, their decisions are incentivized, as they have real monetary consequences for others.

Our experimental design incorporates two fundamental characteristics of markets that could affect individuals' perceptions of skill-biased income inequalities. First, markets reveal preferences; an agent whose supply meets demand implicitly satisfies another agent's preferences. Second, satisfying a demand produces value for the agents whose demand has been met. This value could represent utility gains for consumers or monetary profits for firms. In the market luck treatment, we model the labor market to align with these characteristics. We allow buyers to decide what they want to produce, thus revealing their preferences for a specific type of production through their choice. Additionally, the labor supplied by a worker generates profit for the buyer. Since both channels could potentially affect people's redistributive preferences, we design an additional treatment where buyers cannot express a choice to isolate these two mechanisms.

To identify the effect of market luck, we implement multiple treatments that differ in the source of inequality between the paired workers. Specifically, we compare the spectators' acceptance of inequality in the market luck treatment to a *brute luck* treatment, where there are no buyers and income inequality between the paired workers is determined by a random coin flip. Furthermore, to benchmark our main treatment effect, we implement an

[1]There exists a longstanding philosophical tradition positing that impartiality serves as a distinct foundation for moral judgments concerning matters of justice. See, e.g., Mongin (2001) for an overview.

effort treatment where effort levels are not fixed, and inequality is determined by the relative performance of the paired workers.

The crucial aspects of our experiment are that, except for the effort treatment, inequality is always generated by a random process and each worker provides the same level of effort. All workers have the same probability of earning additional income and cannot influence the outcome by providing more effort. If individuals hold meritocratic fairness views in the conventional sense, we would thus expect spectators to implement similar levels of inequality across all treatments. However, we hypothesize that market-driven inequalities, even if determined by external factors, increase spectators' acceptance of inequality.

We find that spectators accept significantly higher levels of inequality when its source is attributed to market luck compared to the brute luck condition, with the market luck treatment increasing inequality by more than 50%. This effect is economically meaningful, as it mirrors the difference in Gini coefficients between countries with very low inequality, such as Denmark (0.27), and those with significantly higher inequality, such as the US (0.38) (OECD, 2022). Compared to the benchmark where initial inequality is determined by effort, the market luck treatment closes about half of the inequality gap between the brute luck and the effort treatment.

We then delve deeper to understand the mechanism of inequality acceptance in the market luck treatment. First, we show that taking away the choice of the buyers by randomly assigning them to a type of production in the *profit-only* treatment does not significantly affect the spectator's acceptance of inequality compared to the market luck treatment. Second, we implement another treatment, the *no-exchange* treatment, where worker incomes are still determined by matching with a certain buyer, but the buyer does not demand anything from the workers. Additionally the buyers cannot choose their production and do not earn a profit in this treatment. We find that the inequality implemented in the no-exchange treatment is virtually identical to that in the brute luck treatment. These additional treatments highlight that the market luck effect is primarily driven by the fact that the lucky worker's labor generates a profit for the buyer, rather than by the mere presence of the buyer. These findings suggest that the conventional dichotomy of effort versus luck falls short of explaining redistributive preferences in contexts where markets generate and perpetuate inequality.

To explore the extent to which our findings generalize to real-world market settings, we conducted a complementary survey experiment to elicit fairness views in different market scenarios. In the survey experiment, subjects were presented with vignettes describing scenarios involving two similar workers who experienced unequal income shocks due to different structural market changes, brute luck, or effort. For instance, we informed subjects that one worker experienced a loss in earnings due to automation or competition from foreign imports.

In other scenarios, we describe that income differences arose because one worker's earnings increased, such as through technological innovations that enhanced her productivity. Subjects are informed that these shocks were exogenous and could not have been anticipated by the workers. Subsequently, subjects are asked to evaluate the fairness or unfairness of these income inequalities.

The survey experiment results further substantiate the findings from the online experiment, revealing that individuals perceive inequalities as fairer when induced by external market shocks rather than brute luck. While subjects view income differences in the brute luck scenario as unfair, they perceive income differences as fair on average across all market scenarios. This perception is particularly strong when market shocks result in higher earnings for some workers, compared to when income inequality arises from income declines for some workers. A possible interpretation of this finding is that people exhibit a form of loss aversion in their fairness views.

We then investigate how individuals' redistributive behavior in the experiment relates to their support for real-world policies. To do this, we elicit subjects' support for various inequality-reducing policies, such as taxation schemes, unemployment policies, and policies supporting workers in declining industries. We also measure subjects' attitudes toward government interventions related to immigration, trade, and unions. This approach allows us to correlate their revealed redistributive preferences, as measured in the experiment, with their self-reported support for several government policies. Similarly, we can correlate subjects' fairness views from the survey experiment with their support for these different policies. Our findings indicate that both our experimental measures of redistributive preferences and fairness views are significantly correlated with people's support for social welfare policies. Across all policies, inequality acceptance measured in the market luck treatment shows the largest predictive value, suggesting that this treatment might offer a more accurate depiction of the source of income inequality in reality.

Our paper contributes to a growing literature on people's perception of inequality and their demand for redistribution (Alesina and La Ferrara, 2005; Alesina et al., 2018; Benabou and Tirole, 2006; Cruces et al., 2013; Hvidberg et al., 2023; Karadja et al., 2017; Kuziemko et al., 2015). To gain a comprehensive understanding of people's support for redistributive policies, such as different forms of taxation, it is crucial to learn about their fairness views (Alesina and Giuliano, 2011; Cohn et al., 2023; Nathan et al., 2024; Saez and Stantcheva, 2016). The literature suggests that fairness considerations often outweigh efficiency concerns in shaping views on tax policy (Almås et al., 2020; Stantcheva, 2021). We advance the understanding of fairness views by demonstrating that individuals are more likely to accept inequalities driven by market forces, even when the source of inequality is beyond an

individual's control. This finding helps explain the puzzle of why the demand for redistribution has remained stagnant despite the increase in inequality (Kenworthy and McCall, 2008; Kuziemko et al., 2015). We provide a novel explanation for this phenomenon.[2]

We build on experimental literature on meritocracy and fairness views, showing that people are more willing to accept inequalities attributed to differences in effort than those resulting from differences in luck (Almås et al., 2020; Cappelen et al., 2007, 2022; Durante et al., 2014). However, recent studies suggest that people might be "shallow meritocrats", rewarding effort but overlooking the role of luck in shaping opportunities to exert effort or the contextual factors influencing effort provision. For example, Bhattacharya and Mollerstrom (2022) show that when luck determines whether a subject gets the opportunity to work, individuals accept inequalities between working and non-working subjects. Similarly, Preuss et al. (2022) find that people are more accepting of inequality if luck leads to unequal opportunities rather than to unequal outcomes directly (see also Dong et al., 2022). Further, Andre (2024) shows that individuals do not consider that (un)lucky circumstances affect incentives to provide effort, leading to differences in effort and earnings. The common feature of these studies is that luck affects the workers' performance and, consequently, their initial earnings. While this research has primarily focused on individual attributes such as effort and performance, we argue that it is crucial to consider the contextual factors in which inequality emerges, such as market-related aspects, to gain a comprehensive understanding of redistributive preferences. Compared to previous literature studying the interplay between effort and luck, the novelty in our setting is that effort is constant across workers. Workers differ in their skills to transform effort into a specific type of output and inequality arises due to exogenous variation in market demand for different skills. By explicitly modeling both the supply and demand sides, we examine redistributive preferences within a market context and demonstrate that individuals accept exogenous market forces as drivers of inequality.[3]

Our paper offers a new perspective on fairness in a meritocratic society by demonstrating that people are more accepting of inequalities arising from demand shocks, even when there are no differences in effort between workers and it is known that inequality is caused by external factors. Critics of meritocracy have argued that the wealthy often overlook the role of luck in their success, which can lead to harmful political behavior and attitudes (see e.g., Frank, 2016; Sandel, 2020). Our findings suggest that even when individuals recognize the

[2]Our paper also contributes to a literature exploring the role of social preferences in shaping people's political views and support for redistributive policies (Epper ⓡ al., 2020; Fisman et al., 2017; Harrs and Sterba, 2023; Kerschbamer and Müller, 2020). We show that our experimental measure of inequality acceptance within a market setting significantly predicts support for social welfare policies.

[3]There exists literature studying how markets can affect social preferences and moral values (Bartling et al., 2015, 2020; Falk and Szech, 2013; Kahneman et al., 1986; Sandel, 2012). We contribute to this literature by investigating how market interactions and specific aspects of market demand shape redistributive preferences.

influence of market luck, they still accept it as a driver of inequality.

The remainder of this paper is structured as follows. Section 2 presents a simple conceptual framework. Section 3 describes the main experimental design. Section 4 explains the data collection, and Section 5 presents the main results. Section 6 presents the design and results of the complementary survey experiment. In Section 7, we examine the relationship between the experimental measures of fairness views and subjects' support for real-world social welfare policies. Finally, Section 8 concludes the paper.

2 Conceptual Framework

In order to guide our main analysis we introduce a simple framework. It models the social preferences of a third-party spectator i who is confronted with inequality between two individuals A and B, of whom A has initial earnings Z and B has zero initial earnings. For simplicity, the third-party spectator i only cares about fairness and dislikes deviating from what he or she considers fair. Hence, spectator i chooses the optimal amount of redistribution, maximizing the utility function,

$$V_i(y_i) = -(\frac{y_i}{Z} - s_i)^2, \tag{1}$$

where y_i is the income that spectator i, through redistribution, allocates to the individual A with initial earnings Z, and s_i denotes the share of Z that the third party i considers to be the fair amount to give to A.

Focusing on an interior solution, the optimal spectator behavior is given by

$$y_i^* = Z s_i. \tag{2}$$

According to the meritocratic ideal, s_i should only depend on factors within a worker's control. For simplicity, these endogenous factors collapse to individual effort e_k with $k = A, B$. Hence, for a meritocratic spectator only d, the difference between the effort provided by individual A, e_A, and the effort provided by individual B, e_B, enters their redistributive choice, such that

$$s_i(d) = \frac{1}{2} + d, \tag{3}$$

where d is a function that is non-decreasing in the effort differences between individuals A and B:

$$d = f(e_A - e_B), \tag{4}$$

with $f \in [-\frac{1}{2}, \frac{1}{2}]$ and $f(0) = 0$. More precisely, if there is no difference in effort between individuals A and B ($d = 0$) and, hence, the distribution of initial earnings was determined purely by factors outside of the individuals' control, it is fair to equally split the total earnings between the two individuals ($y_i^* = \frac{Z}{2}$). If individual A provides more effort than individual B ($d > 0$), it is fair for individual A to get a larger share of the total earnings, and if the effort difference between the two individuals is sufficiently large ($d = \frac{1}{2}$), it is fair that individual A can keep all the initial earnings ($y_i^* = Z$).

The novelty of this paper is that we introduce parameters α, β and ω in the function describing s_i, such that

$$s_i(d, \omega, \alpha, \beta) = \frac{1}{2} + \alpha d + \beta \omega, \tag{5}$$

with $\alpha, \beta \in [0, 1]$ and $\alpha + \beta \leq 1$, and $\omega \in [-\frac{1}{2}, \frac{1}{2}]$. Parameter ω captures factors that introduce inequality and lead to initial earnings Z for individual A but are exogenous to provided effort e_k.[4] These factors are, nonetheless, considered a fair source of inequality and increase the fair share s_i that a spectator allocates to individual A. In our case, ω entails *market luck*, i.e., the exogenous demand for the skill of one of the individuals. Whereas α represents the weight a spectator assigns to effort difference d in her fairness judgment, β captures a spectator's fairness tolerance for external factors causing inequality. According to the conventional definition, it holds that $\alpha = 1$ and $\beta = 0$ for a meritocratic spectator, as she considers all external factors to be an unfair source of inequality.

In this paper, we want to investigate whether spectators accept inequalities that are caused by exogenous factors and test the following hypothesis:

Main Hypothesis. *The fair income share for the individual with initial earnings is larger when inequality is caused by market luck than when inequality is caused by brute luck, i.e., s_i is strictly increasing in $\omega \Leftrightarrow \beta > 0$.*

Intuitively, our hypothesis states that individuals do not only make the strict distinction between exogenous and endogenous factors that cause inequality but also accept that there are exogenous factors that generate inequality. In our study, these exogenous factors represent shocks to market demand as these are arguably important drivers of the rise in inequality we observe in reality. Holding effort levels constant across workers and experimental treatments ($d = 0$) allows us to identify the effect of market luck on spectators' inequality acceptance. Similarly, by abstracting from market luck ($\omega = 0$) and allowing for differences in effort

[4] Whereas this implies that an individual's effort e_i cannot affect ω, it is possible that exogenous factors, such as circumstances, shape effort choices. For the sake of simplicity, we abstract from this possibility in this paper.

($d \neq 0$), we can discern the impact of effort differences on spectators' acceptance of inequality. This approach captures the traditional meritocratic fairness perspective, which distinguishes solely between luck and effort.

3 Experimental Design

To investigate our main hypothesis, we designed an online experiment where we separately recruited three types of subjects: workers, buyers, and spectators. In our main treatment, the market luck treatment, workers meet buyers in a market setting that generates income inequality between workers. Our main outcome of interest is the redistributive behavior of the spectators, who are randomly assigned to one of the experimental treatments.[5]

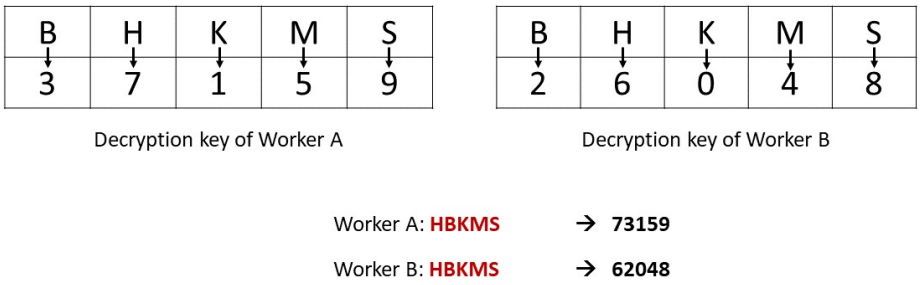
3.1 Workers

Subjects recruited as workers are randomly assigned to specialize in one of two tasks: *odd* or *even*. In both tasks, workers have to translate ten letter sequences into sequences of digits with the help of a decryption key they are given. As illustrated in Figure 1, the tasks differ only in that some workers receive a decryption key that translates letters into odd digits, while other workers receive a decryption key that translates letters into even digits. This reflects the conceptualization of skill as the factor that turns effort into a specific type of output. Hence, workers' skills can be inferred from the output generated by their labor. This mirrors real-world scenarios where, for example, a factory worker and a researcher both put in a day's work, providing the same effort, but at the end of the day, the factory worker has produced a car and the researcher a paper.[6] Furthermore, a worker has a comparative advantage since another worker with a different skill could not do her task and vice versa. More importantly, this design allows us to hold effort constant across all workers since all workers translate the same amount of sequences, and it appears reasonable to argue that translating letters into odd or even digits requires the same amount of effort. This design feature is crucial as it allows us to rule out that beliefs about differences in effort drive our results. After the workers have provided effort and completed the task, each worker is paired with another worker who worked on the other task, i.e., who has a different skill.

[5] See Appendix E.1 for the complete experimental instructions.

[6] See Appendix D for a simple conceptual framework of labor supply and demand, illustrating how skill-biased inequalities arise due to exogenous labor demand shocks.

Figure 1: Translation task workers



Notes: This figure illustrates the translation task of the workers. All workers translate the same letter sequences, but a worker assigned to the *odd* task receives a decryption key that translates letters into odd numbers (Worker A), whereas a worker assigned to the *even* task receives a decryption key that translates letters into even numbers (Worker B).

3.2 Buyers

Subjects recruited as buyers are assigned to the production of products *ODD* or *EVEN*. Buyers are assigned to the production based on their choice. For that, buyers are asked at the beginning of the experiment whether they prefer to work with odd or even numbers. Buyers who choose even numbers have to upload even number sequences, and buyers who choose odd numbers have to upload odd number sequences. This design feature captures an essential characteristic of markets, where the buyer's demand reflects her preference, which is revealed through her choice of production.

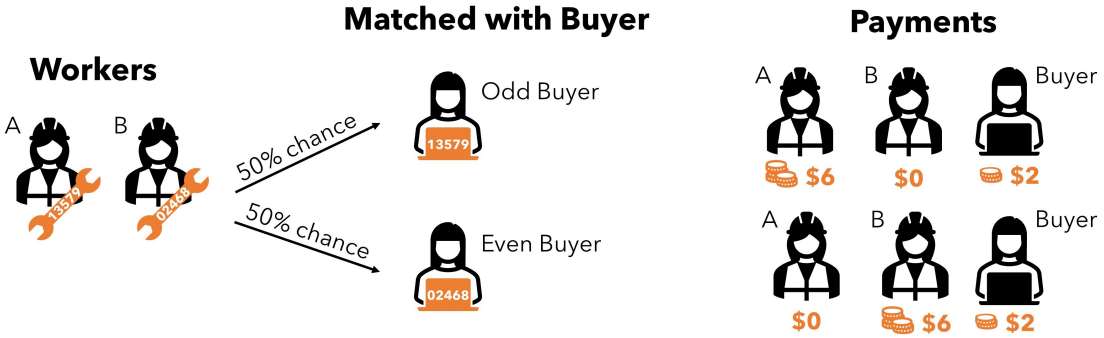
For the production, buyers need to upload sequences of digits by checking them off in a matrix of randomly ordered number sequences. The production of the two products differs as for product *ODD*, buyers need to upload sequences of odd digits, while for product *EVEN*, buyers need to upload sequences of even digits. Hence, buyers need sequences of odd or even digits; in other words, they need a specific input for their production.

The buyers need to buy the sequences from the workers in order to earn an additional income (USD 2) from the production. It is explained to the workers and buyers that buyers have to buy the number sequences they need from the worker for a fixed price (USD 6). Buying the right sequences allows the buyers to produce, i.e., to upload the number sequences. This generates additional earnings for the buyer (USD 8); hence, the buyers make a profit of USD 2. This payoff structure mirrors the real labor market, where the labor supplied by a worker generates a profit for the buyer and an income for the worker.

Income inequality between the paired workers is induced by the matching of workers with a buyer. Only one of the two workers translated the number sequences the buyer needs for her production. This worker can sell her sequences to the buyer and earns an additional income (USD 6). The other worker who cannot sell her sequences earns no additional income. The matching of a worker pair with one buyer, therefore, generates random variation in market

demand, which reflects how, in reality, exogenous shocks to market demand make certain skills more valuable. Figure 2 illustrates how the initial payments of workers and the buyer are determined.

Figure 2: Payment allocation process



Notes: This figure illustrates how the payments of the workers and the buyer are determined. In the first stage, workers are randomly assigned to a task and translate number sequences. In the second stage, the paired workers are randomly matched with a buyer, who chose either odd or even numbers. In the third stage, payments are realized. The worker who can provide the buyer with the number sequences the buyer needs earns USD 6, whereas the other worker earns no additional income. The buyer earns USD 2 in total for buying and uploading the number sequences.

3.3 Spectators

As our main outcome, we measure how subjects recruited as third-party spectators redistribute earnings between two workers. We apply a between-subject design for our experiment so spectators are randomly allocated to one of the treatments. Within each treatment, spectators are matched with a pair of workers (worker A and worker B), where one worker earned an additional income (USD 6), and the other worker earned no additional income. It is emphasized to the spectators that their choice has real-life consequences. The spectators' choices are probabilistically incentivized, meaning that the decision of one out of ten spectators is payoff-relevant for a pair of workers. Spectators receive detailed information about the context of their decision, i.e., they are fully informed about the information provided to the workers and the buyers and how earnings were determined. Spectators are also informed that workers are at no point informed about their earnings to minimize the role of worker expectations in the decision of the spectators.[7] Spectators also know that there should not be any differences in effort between the two workers, except for the benchmark effort treatment, as both workers translate the same number of sequences. Spectators have

[7]Workers do not know their initial earnings but are only told that a third person, the spectator, will be informed and allowed to redistribute the initial earnings.

to answer comprehension questions to make sure that they fully understand the context of their decision. Finally, spectators decide whether and how they want to redistribute earnings from the high-income worker to the low-income worker.[8] Our main outcome of interest is the inequality I implemented by spectator i:

$$I_i = \frac{|\text{income worker } A_i - \text{income worker } B_i|}{\text{total income}} \in [0, 1]$$

The interpretation of inequality I is similar to the one of a Gini coefficient, where a higher value indicates a more unequal distribution of incomes.

3.4 Additional Treatments

To estimate the effect of market luck on redistributive preferences, we implement additional treatments: a control treatment, a benchmark treatment, a mechanism treatment, and a robustness treatment. Comparing spectators' implemented inequality in the market luck treatment and the control treatment identifies the causal effect of market luck on redistributive preferences. This allows us to test our main hypothesis that $\beta > 0$. The benchmark treatment allows us to compare our main treatment effect to the treatment effect of brute luck versus effort experiments. We implement a mechanism treatment to isolate the channels potentially driving our main treatment effect.

In all treatments, workers are randomly assigned to one of the two tasks, odd or even, and are subsequently matched with another worker who worked on the other task, i.e., who has a different skill. After both workers provided effort and completed the task, we induce income inequality between the two workers, as one of the two workers earns a high income (USD 6), whereas the other worker earns nothing for completing the task. The treatments differ in the source of the induced inequality. Table 1 gives an overview of all experimental treatments.

Control Treatment: Brute Luck

In the brute luck treatment, a coin flip decides which worker earns the additional income and which worker earns no additional income after they complete the task. There are no buyers, i.e., we do not model the market demand side. Holding effort levels constant across workers ($d = 0$) enables us to isolate the effect of market luck on spectators' acceptance of inequality by comparing the implemented inequality in the market luck and brute luck treatments, allowing us to test whether $\beta > 0$.

[8] Spectators can choose between seven possible income distributions, (6,0), (5,1), (4, 2), (3, 3), (2, 4), (1, 5), and (0, 6).

Benchmark Treatment: Effort

In this treatment, the allocation of the additional income is based on workers' relative productivity. In other words, this is the only treatment where the source of inequality is endogenous with respect to the workers' behavior. Both workers work on the translation task for the same amount of time, and the worker who translates more sequences earns the additional income. As in the control condition, there are no buyers in this treatment. By comparing the effort treatment to the brute luck treatment, we abstract from market luck ($\omega = 0$), which allows us to test whether $\alpha > 0$.

Mechanism Treatment: Profit-only

The main treatment effect comparing the brute luck and the market luck treatment could be driven by the fact that i) buyers earn an additional income from their production and that ii) buyers could choose what they want to produce and thereby reveal a preference which is then satisfied by one of the workers. The mechanism treatment allows us to isolate the two potential mechanisms.

The profit-only treatment is almost identical to the market luck treatment, with the only difference that buyers are randomly assigned to their production, in contrast to the assignment being based on their choice. Buyers still earn an additional income (USD 2), and hence, this mechanism treatment isolates the effect of the buyers' profit.

Robustness Treatment: No Exchange

Compared to the brute luck treatment, the decision context of the spectators in the market luck treatment involves an additional actor, the buyer, and the initial inequality between workers depends on the random matching with buyers. A potential confound could be that this difference already drives the treatment effect. To address this concern, we designed an additional robustness treatment.

The difference between the no-exchange treatment and the control treatment is that we include buyers. Buyers do not make a choice and are randomly assigned to the *ODD* or *EVEN* production. They do not earn additional profits from the production. The worker pair is still matched with a buyer, and the worker who translated the same type of letters as the matched buyer uploads earns the high income, whereas the other worker earns no additional income. However, there is no exchange between workers and buyers, i.e., there is no demand from the buyers, as they are just given the number sequences they have to upload.

Table 1: Overview of Experimental Treatments

	Buyer	Exchange	Profit	Choice	Source of inequality (w.r.t. workers' effort)	Observations
Market Luck	✓	✓	✓	✓	exogenous	422
Brute Luck	✗	✗	✗	✗	exogenous	440
Effort	✗	✗	✗	✗	endogenous	195
Profit only	✓	✓	✓	✗	exogenous	441
No exchange	✓	✗	✗	✗	exogenous	436

4 Data Collection

The experiment was preregistered at the AEA RCT Registry (AEARCTR-0011869). We used the software Qualtrics to implement the online experiment. We collected our data through the panel provider Prolific Academic from a representative sample of the US population, cross-stratified on gender, age, and ethnicity.[9] Our sample is not perfectly representative of the U.S. general population, but it is not very dissimilar either – for more details, see Appendix Table C.3. Subjects were randomized within the experiment into one of the treatment arms. All subjects received a fixed participation compensation, which amounted to an estimated hourly wage of USD 12. Spectators received a participation compensation of USD 4, whereas workers and buyers received a participation compensation of USD 1. Depending on the treatment assignment and the spectators' decision, workers and buyers received additional bonus payments. Spectators earned a bonus payment of USD 0.25 if they answered all comprehension questions correctly. 10% of the spectators were matched with actual workers, which was explained in the spectators' instructions.

We collected our data in two waves, as specified in the pre-analysis plan. We collected data from 405 workers, 180 buyers, and 1988 spectators in August and September 2023. We pool the data from the two waves of data collection and include wave fixed effects in all our analyses (see Appendix A for a detailed discussion of the data collection process and Appendix Table C.2 for descripitve statistics of the spectators). We rejected submissions from spectators who did not pass an attention check and exclude spectators with a completion time that deviated by more than two standard deviations from the mean completion time from the analyses, as specified in the pre-analysis plan. Our final sample consists of 1934 spectators.

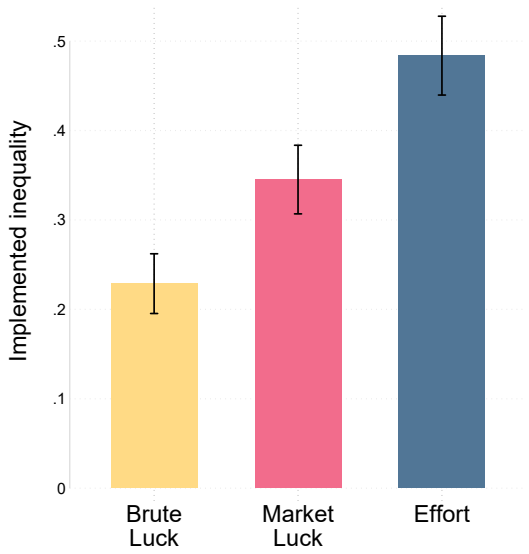
[9] Workers and buyers were not recruited from a representative sample.

5 Results

5.1 Main Results

As our main hypothesis, we test whether the market luck treatment increases spectators' inequality acceptance compared to the brute luck treatment. In the market luck treatment, only one of the two workers can satisfy a randomly matched buyer's demand that is based on the buyer's choice and generates a profit for that buyer. In both treatments, the source of inequality is entirely beyond the workers' control. Figure 3 shows that the average implemented inequality in the brute luck treatment is 0.229, whereas the average implemented inequality in the market treatment is 0.345.[10] In other words, the average level of inequality increases by 0.116, which is an increase of more than 50% from the baseline level in the brute luck treatment (Mann-Whitney $p < 0.001$). This effect is economically meaningful as it is of a comparable magnitude to the difference in Gini coefficients between countries with very low inequality levels, like Denmark (0.27), and countries with significantly higher levels of inequality, such as the US (0.38) (OECD, 2022).

Figure 3: Average implmented inequality



Notes: Error bars indicate the 95% confidence interval. (N = 1057)

Figure 3 also shows that spectators implement significantly higher levels of inequality in the effort treatment, where the average implemented inequality is 0.484. This result is in line

[10]The histograms in Appendix Figure B.1 show that there is a higher share of equal income distributions (3, 3) in the luck treatment.

with previous research that shows that people have the meritocratic tendency to equalize incomes if inequality is due to brute luck and accept higher levels of inequality if it is due to effort differences (Cappelen et al., 2007; Almås et al., 2020; Durante et al., 2014). Our results suggest that the distinction between luck versus effort as the source of inequality does not fully capture people's redistributive preferences, as we see significantly higher levels of implemented inequality in the market luck treatment, which closes about half of the gap between the brute luck and the effort treatment.

Table 2: Regression results on implmented inequality

	(1)	(2)	(3)	(4)	(5)	(6)
Market Luck	0.117***	0.110***			0.117***	0.110***
	(0.026)	(0.026)			(0.026)	(0.026)
Effort			0.248***	0.247***	0.232***	0.233***
			(0.035)	(0.034)	(0.032)	(0.032)
Constant	0.251***	0.326***	0.236***	0.198***	0.251***	0.288***
	(0.023)	(0.051)	(0.027)	(0.056)	(0.023)	(0.047)
Controls	No	Yes	No	Yes	No	Yes
F-stat p-val	0.000	0.000	0.000	0.000	0.000	0.000
Adj. R-squared	0.023	0.053	0.102	0.141	0.060	0.084
Observations	862	862	635	635	1057	1057

Notes: This table reports OLS estimates with robust standard errors in parentheses. The dependent variable is implemented inequality. Control variables include age, a female dummy, a high education dummy variable for having a Bachelor's or Post-graduate degree, a high-income dummy variable for having an income above USD 75,000, a Democrat dummy, as well as dummy variables for having an Asian, Hispanic, or Black ethnicity. All regressions include dummy variables for the wave of data collection. Significance levels: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table 2 reports the corresponding regressions of implemented inequality on indicators for the market luck and the effort treatment. The reference category is the brute luck treatment, which implies that the estimated treatment effects for the market luck and the effort treatments show how much inequality increases if the source of inequality is market luck or relative performance, respectively. Columns 1) and 2) show the coefficient for the market luck treatment, and columns 3) and 4) show the coefficient for the effort treatment. In columns 5) and 6), we estimate the coefficients for the two treatments in a combined regression. If indicated, we control for background characteristics of the spectators, including their age, gender, political affiliation (Democratic), education (high vs. low education), income (high vs. low income), and ethnicity (Black/Afro-American, Asian/Asian American, Hispanic/Latino, White/European American). We include a dummy variable for the wave of data collection in all regressions.

The market luck treatment effect is highly significant ($p < 0.001$ in all specifications) and robust to controlling for background characteristics of the spectators. In terms of magnitude,

the coefficient for the market luck treatment is about half the size and statistically different from the effort treatment coefficient ($p < 0.001$).

Result 1. *Market luck instead of brute luck as the source of inequality causes a sizeable and significant increase in the spectators' acceptance of inequality, i.e.* $\beta > 0$. *In other words, spectators perceive inequalities as fairer if the high-income worker satisfies the demand of a randomly matched buyer, generating a profit for the buyer.*

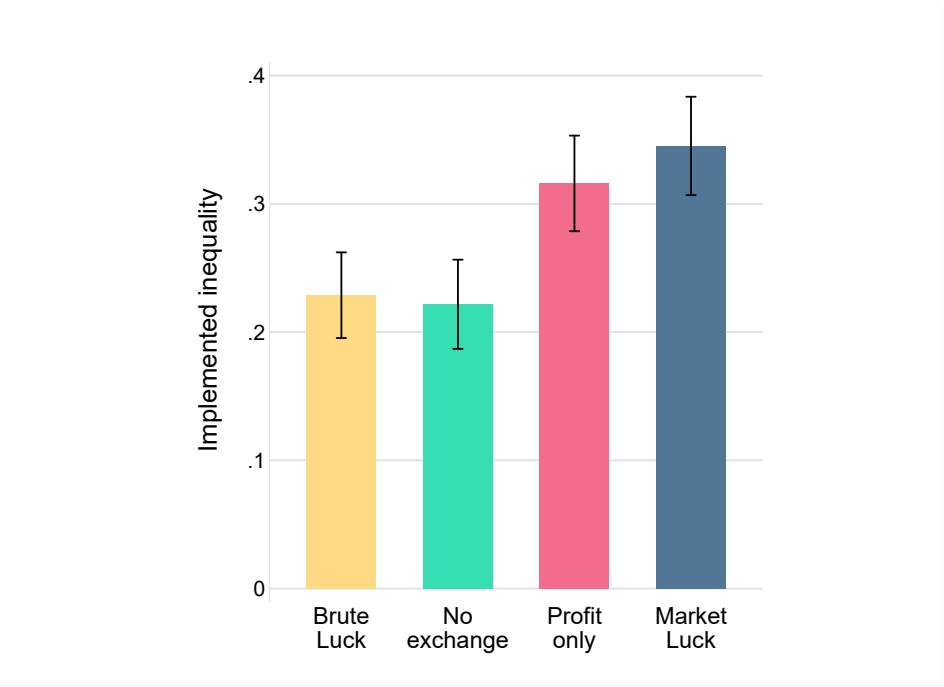
Result 1 suggests that people seem to be more accepting of inequalities that are caused by market shocks, even when the source of inequality is beyond individuals' control. In the context of our conceptual framework, this suggests that people consider exogenous factors (ω) to determine the fair level of inequality (i.e., $\beta > 0$). This finding contradicts the widely spread principles of a meritocratic ideology, which assert that inequalities are only justifiable when they result from factors within workers' control, such as their level of effort.

5.2 Mechanism: Choice versus Profit of Buyer

In our main treatment, inequality is caused by a shock to market demand, where only one worker can satisfy a buyer's demand that i) is based on the buyer's choice and ii) generates a profit for the buyer. Both aspects could affect the spectators' redistributive behavior. To get a better understanding of the drivers of the main treatment effect, we implement the mechanism profit-only treatment. In the profit-only treatment, buyers cannot choose but are randomly assigned to the type of production. Other than that, the mechanism treatment is identical to the market luck treatment. This allows us to test whether the fact that buyers can make additional profits because they bought the sequences from a worker affects the spectators' redistribution behavior.

Figure 4 shows the average implemented inequality across all treatments where inequality was determined exogenously (luck treatments). The average implemented inequality is significantly higher in the profit-only treatment than in the brute luck treatment (0.229 vs. 0.316, Mann-Whitney $p < 0.001$). This suggests that the mere fact that one worker can generate a profit for the buyer increases the spectators' willingness to accept that this worker earns a high income. Appendix table C.4 reports the corresponding regression results and shows that the profit-only treatment significantly increases implemented inequality by 0.108 ($p < 0.001$). This treatment effect is slightly smaller than the coefficient of the market luck treatment, but the coefficients are not statistically different from each other ($p = 0.942$). The results, therefore, suggest that the buyer's profit is the main mechanism that explains the market luck treatment effect.

Figure 4: Average implemented inequality in the luck treatments



Notes: Error bars the indicate 95% confidence interval. (N = 1736)

Result 2. *Spectators accept significantly higher levels of inequality if the high-income worker generated a profit for the randomly matched buyer.*

Result 2 suggests that creating a profit for a buyer increases the workers' deservingness of the high income, even though this worker just got lucky that they got matched with the right buyer. More broadly, this would suggest that people perceive it as fair and are willing to accept that more productive skills receive higher rewards in the labor market, even if it is determined by external factors which skills those are.

5.3 Robustness: Presence of Buyer - No Exchange

One potential confound is that the main treatment effect is driven by the presence and the random matching with the buyer, as it might make the decision context more complex and the randomness of the source of inequality less salient.[11] Put differently, the results in the market

[11] One might also think that the preferred inequality between the two workers could differ for an inequality-averse spectator in a setting where there are only two workers versus a setting with two workers and a buyer. Optimal redistribution is, however, identical in both settings for spectators who are inequality-averse in the sense of Fehr and Schmidt (1999) or Bolton and Ockenfels (2000), as they would prefer to equalize earnings between the two workers in both cases. This also applies to spectators who aim to minimize inequality, such as by reducing the Gini coefficient.

treatment could mainly be driven by the more involved and convoluted choice setting that the spectators face. To address this concern, we implement the no-exchange treatment, where the decision context of the spectators involves a buyer. Workers get randomly matched with a buyer, which determines their initial earnings. However, buyers do not buy the sequences from the workers and do not earn an additional income from the production. In other words, there exists no relationship between workers and buyers besides that the random matching determines the initial income inequality between the two workers.

Figure 4 shows that implemented inequality in the brute luck and the robustness treatment are almost identical (0.229 vs. 0.222, Mann-Whitney $p = 0.407$). Appendix table C.4 confirms this result by showing that the coefficient for the robustness treatment is close to zero and statistically insignificant.

Result 3. *The random matching of workers with the buyer as the source of inequality does not influence the spectators' acceptance of inequality.*

Result 3 suggests that the mere presence of the buyer alone cannot explain the main effect of the market luck treatment. In other words, only if the buyer earns a profit from the worker's labor do spectators perceive it as fairer for this worker to earn a high income.

We further elicited spectators' perceptions about the randomness of the initial earnings. For that, we asked spectators in all treatments whether they thought that the two workers were equally likely to receive the high earnings before the spectators had the chance to redistribute the earnings. Appendix figure B.2 shows that the share of spectators that thought the initial earnings were random is slightly higher in the control treatment (85% versus 75% in the other luck treatments), but the results in appendix table C.5 confirm that our main results are robust to controlling for the spectators' perception of the randomness of the initial earnings (columns 1 - 4) or restrict the sample to spectators that perceived initial earnings to be random (columns 5 - 8).

6 Survey Experiment

Our parsimonious experimental approach to study fairness views has the advantage of increased control, which allows for a clean identification. We run a complementary survey experiment to elicit fairness views in different market scenarios. This allows us to explore further to what extent our findings generalize to real-world market settings.

The survey experiment was also preregistered at the AEA RCT Registry (AEARCTR-0011869) and implemented in January 2024. We collected data from 801 subjects through the panel provider Prolific Academic from a representative sample of the US population, cross-stratified on gender, age, and ethnicity.

6.1 Experimental Design

Subjects are shown different vignettes that describe the scenario of two similar (in terms of age, gender, and initial earnings) workers who experience an unequal income shock due to different structural changes, such as immigration, international trade, technological change, and a change in consumer taste. Subjects are told that these market shocks were completely unexpected and that these shocks lead to income inequality between the two workers (i.e., higher or lower earnings for one of the two workers). Subjects then indicate, in a non-incentivized way, whether they perceive such inequalities as fair or unfair. To benchmark their fairness views, we also present vignettes where inequality arises because of differences in brute luck and differences in effort. The different scenarios contained the following information:[12]

Immigration. An inflow of immigrants changes the workforce in the occupation of only one worker such that his earnings decrease, whereas the earnings of the other worker remain unchanged.

Trade. An unexpected increase in foreign imports decreases the earnings of one of the two workers.

Technological change: productivity gain. Income inequality between the two workers increases as technological change leads to innovations that improve the productivity of one worker.

Technological change: productivity loss. Automation makes one worker less productive as some of the tasks can now be done by machines, which leads to lower earnings for this worker.

Change in consumer taste. A change in the taste of consumers boosts the sales of the company of one worker, which leads to higher earnings for this worker.

Brute luck. Other than in the above scenarios, the two workers in this scenario work in the same job at different branches of the same company. The company organizes a lottery to determine which branch will get a pay raise.

Effort. The two workers work in the same job for different companies. Because one of the two works harder than the other, she receives a pay raise.

Each subject was shown a random selection of three vignettes, and they could indicate their fairness evaluation of the income inequality on a 7-point Likert scale (0: completely unfair, 6: completely fair).

Anticipation of shocks. The market shocks are deliberately characterized as entirely unpredictable to establish and control subjects' beliefs regarding the anticipation of such

[12]The complete survey instruments are shown in Appendix E.2.

shocks. Subjects understand that the workers could not have foreseen these shocks, emphasizing that, from the workers' perspective, the shocks are exogenous and beyond their control. In real life, individuals might have beliefs about the predictability of such shocks which could influence their fairness views. For instance, if individuals think that workers should have foreseen advancements in automation and its impact on their employment and income, they might be more inclined to accept income inequality resulting from automation. To examine the impact of anticipation on subjects' perceptions of fairness, we experimentally vary whether subjects are presented with vignettes where the market shocks are described as unexpected or vignettes where we do not explicitly state the unpredictability of these market shocks.

6.2 Results

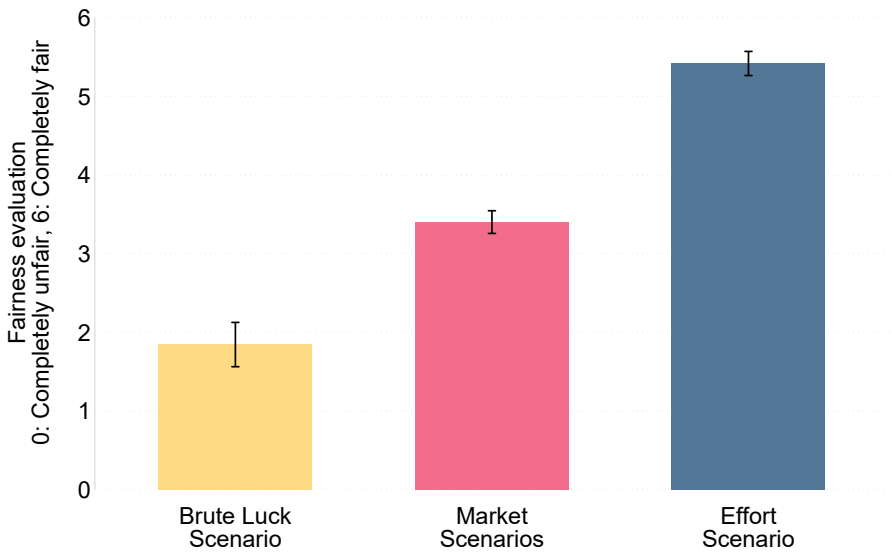
Figure 5 shows the average fairness evaluation across market scenarios and for the luck and effort scenario.[13] The pattern is strikingly similar to the results from the online experiment, as subjects view inequalities resulting from brute luck as highly unfair (mean rating = 1.85), while those arising from differences in effort are considered very fair (mean rating = 5.42). The results show that subjects are more accepting of inequalities if they arise due to market shocks compared to brute luck (mean rating = 3.40). We made clear to the subjects that workers do not differ in their effort and performance (except for the effort scenario), meaning that the source of inequality is completely outside the control of the workers for both the brute luck scenario and the market shock scenarios. The average fairness evaluation in the market scenarios actually crosses the midpoint (3: 'neither fair nor unfair'), implying that, on average, subjects perceive income differences in the market scenarios as fair.

Figure 6 reveals that there are significant differences in fairness evaluations across the different market scenarios.[14] Income differences due to a gain in productivity resulting from innovations (scenario 5) or changes in consumer taste (scenario 6) are perceived as considerably fairer than income differences due to immigration (scenario 2), automation (scenario 3), or trade (scenario 4). Interestingly, income differences in scenarios 2, 3, and 4 occur due to earnings losses for one of the two workers, whereas income differences in scenarios 5 and 6 stem from increases in earnings for one worker. This finding suggests that individuals tend to view inequalities as fairer when a market shock benefits some workers, as opposed to cases where the market shock negatively impacts certain workers. Appendix Figure B.4 shows that the average fairness evaluation in market scenarios with a gain framing is significantly higher

[13] Appendix Figure B.3 shows the histograms of the fairness evaluation for each scenario seperately.

[14] Appendix Table C.6 shows that the fairness evaluations for the market shocks are, in almost all cases, strongly correlated.

Figure 5: Average fairness evaluation market scenarios, luck and effort scenario



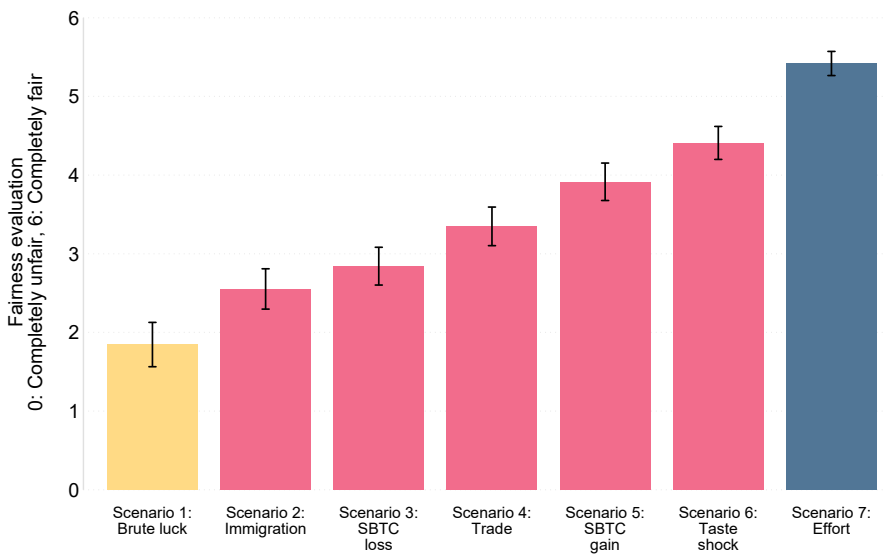
Notes: Error bars indicate the 95% confidence intervals.

than in market scenarios with a loss framing. This could suggest that people exhibit a form of loss aversion in their fairness views.[15]

However, income differences in all market scenarios are perceived as significantly fairer compared to the brute luck scenario. The regression analysis in column (1) of Table 3 confirms that coefficients are statistically significant ($p < 0.001$) if we run regressions of the fairness evaluations on indicators for the different scenarios using the brute luck scenario as the reference category. The coefficients remain significant ($p < 0.001$) and of the same magnitude if we control for subjects' background characteristics (column 2), their attitudes toward free markets (column 3), and their own exposure to market shocks similar to the ones described in the market scenarios (column 4). Since each subject evaluated three different vignettes, we can control for individual fixed effects (column 5), which does not meaningfully change the coefficient of the scenario dummy variables ($p < 0.002$). We also measured subjects' efficiency considerations in each scenario. After eliciting their fairness views, we asked subjects whether they thought that the income differences described in the vignette were an effective way to motivate people to work harder and, thereby, would benefit the economy. When we control for subjects' efficiency considerations, the coefficients for the scenario indicators are reduced to roughly half of their magnitude in the baseline specification

[15]Kahneman et al. (1986) also find asymmetries between gains and losses in fairness judgments regarding firm behavior. Actions of firms are perceived as more unfair if they cause losses for consumers or employees than if they reduce potential gains.

Figure 6: Average fairness evaluation by scenario



Notes: Error bars indicate the 95% confidence intervals.

(column 6). Yet, the effect of subjects' efficiency considerations should be interpreted with caution, as it might be partially endogenous to their fairness views. For example, subjects could use their answers to the efficiency question as an ex-post rationalization of their fairness evaluations. Nevertheless, the scenario indicators remain significant ($p < 0.001$, except for the coefficient of the immigration scenario which is only marginally significant, $p = 0.092$), i.e., subjects perceive income differences in the market scenarios significantly fairer than in the brute luck scenario .[16]

Finally, results shown in Appendix Figure B.5 indicate that the anticipation of market shocks does not significantly affect individuals' fairness views. We do not find significant differences in fairness evaluations when varying the explicit mention of the shock being completely unexpected. Hence, subjects do not seem to regard income differences as fairer if workers could have foreseen the shock that caused income inequality.

Result 4. *Individuals perceive real-world income inequalities between workers that are caused by exogenous labor market shocks as significantly fairer than inequalities that are due to brute luck. Market shocks that lead to income gains are perceived as fairer as market shocks that lead to income losses for some workers, whereas the anticipation of market shocks has no significant effect on fairness views.*

[16]The coefficients for the correlations between the fairness evaluations and the market attitude index, the shock exposure variables, and the efficiency considerations are shown in Appendix Table C.7.

Table 3: Regression results on fairness evaluations

	(1)	(2)	(3)	(4)	(5)	(6)
Immigration	0.707***	0.664***	0.654***	0.651***	0.731***	0.266*
	(0.194)	(0.193)	(0.190)	(0.197)	(0.232)	(0.157)
SBTC loss	0.997***	0.993***	0.983***	1.004***	1.161***	0.583***
	(0.183)	(0.183)	(0.183)	(0.186)	(0.223)	(0.155)
Trade	1.503***	1.489***	1.449***	1.474***	1.646***	0.855***
	(0.191)	(0.191)	(0.187)	(0.194)	(0.232)	(0.163)
SBTC gain	2.069***	2.048***	2.075***	2.030***	2.247***	1.036***
	(0.182)	(0.181)	(0.180)	(0.187)	(0.229)	(0.157)
Taste change	2.563***	2.563***	2.545***	2.541***	2.601***	1.586***
	(0.177)	(0.178)	(0.175)	(0.182)	(0.232)	(0.172)
Effort	3.573***	3.567***	3.528***	3.532***	3.619***	1.652***
	(0.164)	(0.166)	(0.166)	(0.171)	(0.269)	(0.176)
Constant	1.846***	1.771***	1.864***	1.052***	1.727***	0.874***
	(0.144)	(0.256)	(0.250)	(0.323)	(0.194)	(0.213)
Controls	No	Yes	Yes	Yes	No	Yes
Market attitudes	No	No	Yes	No	No	No
Shock exposure	No	No	No	Yes	No	No
Individual FE	No	No	No	No	Yes	No
Efficiency	No	No	No	No	No	Yes
R-squared	0.305	0.323	0.350	0.328	0.698	0.519
Observations	1407	1407	1407	1360	1206	1407

Notes: This table reports OLS estimates with clustered standard errors in parentheses. The dependent variable is the fairness evaluation. *Immigration, SBTC loss, Trade, SBTC gain, Taste change* and *Effort* are dummy variables for the different scenarios (the *Brute luck* scenario is the reference category). Control variables include age, a female dummy, a high education dummy variable for having a Bachelor's or Post-graduate degree, a high-income dummy variable for having an income above USD 75,000, a Democrat dummy, as well as dummy variables for having an Asian, Hispanic, or Black ethnicity. *Market attitudes* is an index consisting of four variables measuring whether subjects believe that i) people get what they deserve in free markets; ii) free markets are efficient and promote economic growth; iii) the government should intervene and regulate markets as little as possible; and iv) private ownership of business is essential for a strong economy. *Shock exposure* are separate variables that measure whether subjects' occupations have been positively or negatively affected by immigration, technological change, trade, or changes in consumer taste. Finally, after each vignette, we asked subjects whether they thought that these income differences were an effective way to motivate people to work harder. Subjects' answers to these questions are captured in the *efficiency* variable. Significance levels: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Result 4 is in line with the evidence from the online experiment showing that market shocks increase the acceptance of inequalities caused by external factors and confirms that our findings extend to more real-life scenarios. Overall, the survey experiment results are consistent with those from the online experiment, suggesting that people perceive inequalities arising from market luck as fair.

7 Support for Social Welfare Policies

We have demonstrated that individuals tend to accept higher levels of inequality in market contexts, both in experimental settings where inequalities emerge from exogenous shocks to market demand and in real-world situations where market shocks lead to income disparities among workers. Can the experimental measures of fairness views also predict individuals' attitudes toward real-world policies? To explore the predictive power of our experimental measures of fairness views, we elicited subjects' support for a wide range of social welfare policies at the end of both studies. We included i) redistributive policies, such as a higher top income tax rate, a wealth tax, and an estate tax; ii) predistributive policies, such as an increase in the minimum wage, an employment bill, and a stronger position of unions; and finally, iii) policies that specifically address market shocks, such as a robot tax, retraining and income support for workers in declining industries, and restrictions to immigration and foreign imports to protect domestic jobs. For each policy, subjects could indicate their opposition or support on a 5-point scale (strongly oppose - strongly support). We create indices for each of the three policy domains using the first principal component of all policies in that domain and standardize the indices to have a mean of zero and a standard deviation of one.

7.1 Predictive Value of Redistributive Behavior in the Online Experiment

We conduct two different exercises to assess the predictive power of our experimental measure of redistributive preferences. First, we regress the indices of policy support on implemented inequality separately for the brute luck, market luck, and effort treatment, controlling for the spectators' background characteristics and wave fixed effects. This exercise provides an indication of how predictive our measure of redistributive preferences is for policy support, beyond a subject's characteristics such as age, gender, income, education, or political affiliation. The left panel of Figure 7 reports the coefficients of these regressions and shows that implemented inequality in the market luck treatment is significantly correlated with the sub-

jects' support for social welfare policies in all domains ($p < 0.001$).[17] The coefficients suggest that a shift in redistributive choices from complete equality to complete inequality in the market luck treatment reduces support for social welfare policies by almost half a standard deviation. The coefficient for the brute luck treatment is also significant across all policy domains ($p < 0.029$), whereas the coefficient for the effort treatment is only significant for the index of redistribution policies ($p = 0.012$).

Second, we calculate the increase in the R-squared statistic to determine how much additional variation in policy support is explained by our measure of redistributive preferences. We quantify the percentage increase in the R-squared of the aforementioned regressions when we include our experimental measure of redistributive preferences in the regression model. The right panel of Figure 7 shows the increase in the R-squared for our measure of redistributive preferences when predicting support for different social welfare policies. In the market luck treatment, adding the measure of redistributive preferences increases the R-squared by 7-10 percent (with an R-squared ranging from 32 to 38 percentage points in the corresponding regressions).

Result 5a. *The experimental measure of redistributive preferences in the market luck treatment has significant predictive power for individuals' support for social welfare policies.*

In terms of magnitude, the coefficient for implemented inequality is on average the largest in the market luck treatment across all policies. Furthermore, across all policy domains, our measure of redistributive preferences increases the R-squared the most in the market luck treatment. This suggests that the market luck treatment might offer a more accurate depiction of the source of income inequality in reality than the brute luck or effort treatment.

7.2 Predictive Value of Fairness Views in the Survey Experiment

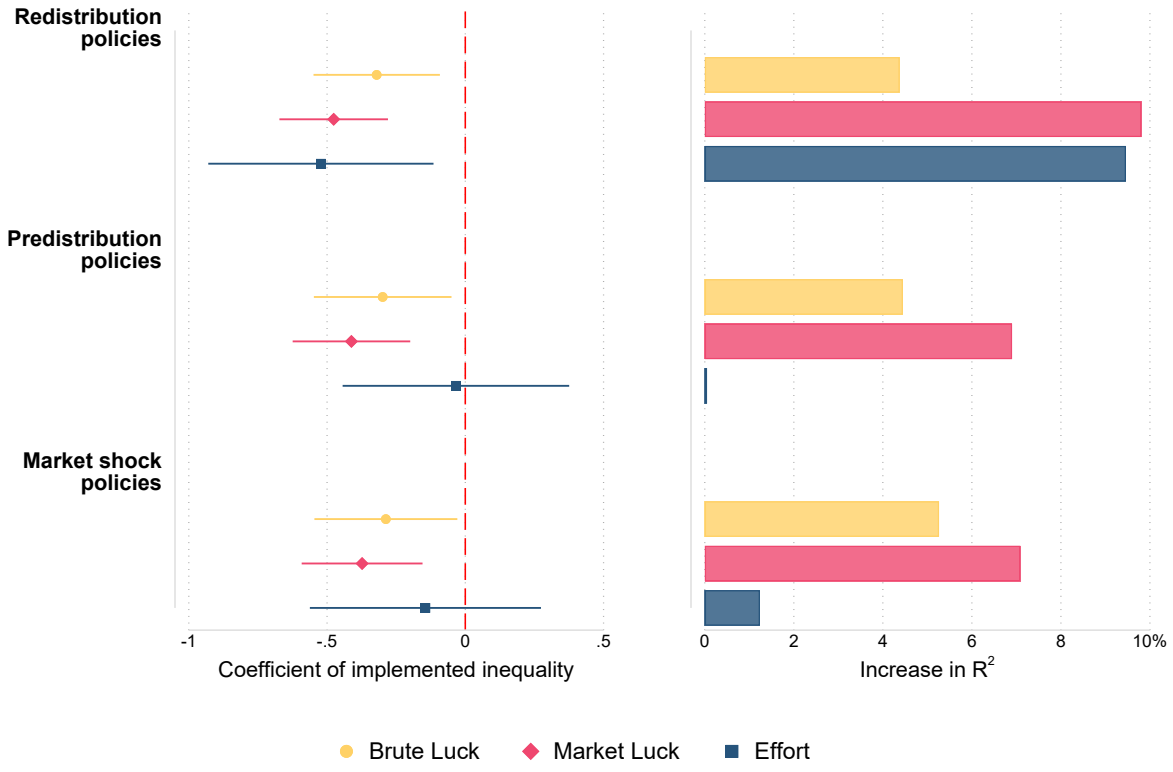
The survey experiment allows us to reassess whether people's fairness views matter for their attitudes toward real-world policy. After eliciting subjects' fairness views in the different scenarios, we measure their support for the same selection of social welfare policies as in the online experiment.[18] We use subjects' fairness evaluations in the brute luck and effort scenarios, and their average fairness rating across all market scenarios, to investigate their predictive power for support of i) redistributive policies, ii) predistributive policies, and iii) policies designed to reduce exposure to or provide assistance following market shocks.

We first regress the standardized indices of policy support on subjects' fairness evaluations, separately for the brute luck scenario, the effort scenario, and the average of the

[17] Appendix figure B.6 shows the results for each policy item separately.

[18] The wording of the policy descriptions is identical as in in the online experiment, with the exception that we no longer included the survey item for the wealth tax.

Figure 7: Correlation of implemented inequality and support for policies in online experiment



Notes: This figure shows results from the online experiment. The left panel shows the coefficient of regressing a policy index on implemented inequality, separately by treatment. All regressions include controls for spectator characteristics and wave fixed effects as specified in Table 2. Error bars indicate the 95% confidence interval. The right panel shows the increase in the R-squared when including the experimental measure of redistributive preferences, given the other explanatory variables in the regression.

market scenarios, controlling for subjects' background characteristics. The left panel of Figure 8 shows that the coefficient for the market scenarios is positive for all policy domains and significant for redistributive policies ($p = 0.027$) and for market shock policies ($p < 0.001$). The coefficient for the brute luck scenario is small and insignificant for all policy domains, whereas the coefficient for the effort scenario is marginally significant for the redistribution policy indices ($p = 0.058$).[19] In terms of magnitude, the fairness views in the market scenarios show the strongest correlation with the support for market shock policies, where a one-unit increase in fairness views (on a 7-point scale) reduces policy support by 0.14 standard deviations.

Second, we calculate the increase in the R-squared when we add our measure of fairness views to the regression model. The results in the right panel of Figure 8 show that the fairness views in the market scenarios have the largest predictive value for market shock policies as they increase the R-squared by more than 18 percent (with an R-squared of 27 percentage points).

Result 5b. *Fairness views in market scenarios are significant predictors of individuals' support for social welfare policies, particularly those designed to address market shocks.*

This result indicates that fairness views significantly predict individuals' support for social welfare policies, with the fairness views in the market scenarios demonstrating the greatest predictive value, similar to the results from the online experiment. While our experimental measure of redistributive preferences has consistent predictive power across all policy domains, our measure of fairness views from the survey experiment is most predictive for market shock policies. This could be due to a stronger link between the context in which we elicit fairness views and the market shock policies in the survey experiment.[20]

Taken together, the findings from both experiments indicate that fairness views elicited in a market context are the most predictive of support for social welfare policies.

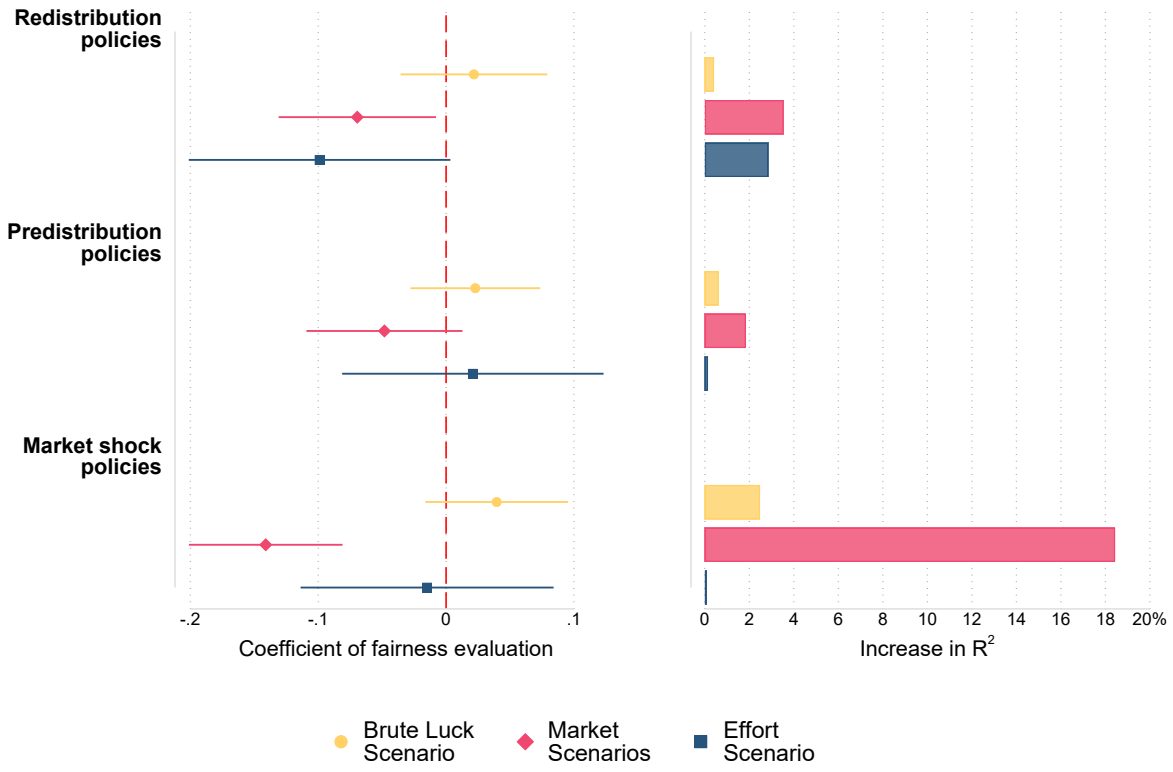
8 Conclusion

The rewards for different skills and the resulting skill-biased inequality are often determined by exogenous market mechanisms over which individuals have no control. Structural transformations, such as globalization and radical technological change, including automation and artificial intelligence, render certain skills obsolete while other skills earn even higher rewards. We refer to these drivers of income inequality as market luck. In this paper, we study the

[19] Appendix Figure B.7 shows the results for each policy item separately.

[20] Appendix Figure C.8 shows coefficients for the correlations between the fairness evaluations in the different scenarios and the support for each policy.

Figure 8: Correlation of fairness evaluations and support for policies in survey experiment



Notes: This figure shows results from the survey experiment. The left panel shows the coefficient of regressing a policy support index on fairness evaluations, separately for the brute luck scenario, the average of the market scenarios, and the effort scenario. All regressions include controls for subject characteristics as specified in Table 3. Error bars indicate the 95% confidence interval. The right panel shows the increase in the R-squared when including the experimental measure of redistributive preferences, given the other explanatory variables in the regression.

trade-off that skill-biased inequalities introduce for redistributive preferences. From the perspective of economic efficiency, skill-biased inequality might appear justified as higher rewards tend to reflect higher productivity. On the other hand, according to widely spread principles of meritocracy, inequalities are only justified if they are due to differences in individual effort and performance but not due to factors outside of individuals' control.

We design an experiment to study this trade-off in fairness views and improve the understanding of individuals' preferences for redistribution by investigating whether people perceive inequalities arising from market luck as fair. In the market luck treatment, we design a setting where skill-biased inequality arises because exogenous shocks to market demand make certain skills more valuable. For that, we model a market's supply and demand side. On the one side, we recruit subjects that act as workers who differ in skills but provide the same amount of effort. On the other side, separately recruited subjects act as buyers who demand a specific type of skill, i.e., a specific type of labor. Matching a pair of differently skilled workers randomly with a buyer determines whether a worker can meet a buyer's demand and consequently sell her labor. The fact that only one worker can sell her labor introduces income inequality between the two workers.

We collected data from almost 2,000 third-party spectators, who could decide how to redistribute earnings between two workers who earned unequal incomes. To identify the causal effect of market luck on spectators' inequality acceptance, we compare implemented inequality in the market luck treatment to a brute luck treatment where initial inequality was determined by a simple coin flip. The crucial aspects of our experiment are that inequality is always generated by a random process and that each worker provides the same level of effort. If individuals have meritocratic fairness views in the conventional sense, we would expect spectators to implement similar levels of inequality in both treatments. Yet, we hypothesize that market-driven inequalities, even if determined by external factors, increase spectators' inequality acceptance.

Our findings are fivefold. First, implemented inequality increases by more than 50% in the market luck treatment compared to the brute luck treatment, suggesting that people are more accepting of inequalities that are caused by market shocks, even when the source of inequality is beyond individuals' control. This finding contradicts the widely spread principles of a meritocratic ideology, which assert that inequalities are only justifiable when they result from factors within workers' control, such as their level of effort. Second, results from an additional mechanism treatment suggest that the market luck effect is driven by the fact that the labor of the high-income worker generates a profit for the buyer, even though this worker just got lucky that they got matched with the right buyer. More broadly, this suggests that people perceive it as fair and are willing to accept that more productive skills receive higher

rewards in the labor market, even if it is determined by external factors which skills those are. Third, we further implement a robustness treatment to substantiate the finding that the presence of the buyer alone cannot explain the main effect of the market luck treatment. Spectators perceive it as fairer for a worker to earn the high income only when the buyer earns a profit from buying the worker's labor as an input for production. This result cannot be explained by the efficiency considerations of the spectator, as the spectator's decision cannot affect workers' incentives in the static setting of the experiment. Fourth, the results of a complementary survey experiment confirm that our findings extend to real-life scenarios where subjects perceive inequalities caused by different exogenous market shocks as fairer than inequality arising due to brute luck. Finally, redistributive behavior in the market luck treatment demonstrates significant predictive power for individuals' support for real-world social welfare policies. Fairness evaluations in the market scenarios also predict support for social welfare policies, particularly for those tailored to address market shocks.

In conclusion, the results in this paper suggest that the conventional dichotomy of effort versus luck falls short of explaining redistributive preferences in contexts where markets generate and perpetuate inequality. This finding could help to further explain the rather muted demand for redistribution despite the stark increase in inequality that can be observed in many parts of the world (Kenworthy and McCall, 2008; Kuziemko et al., 2015). An important avenue for future research could be to improve our understanding of when and why people accept inequalities caused by exogenous factors and to identify these factors. It would also be interesting to see whether our findings replicate in populations with different cultural backgrounds, such as varying degrees of market socialization. A possible interpretation of our results is that society is not as sensitive to the *luck-effort* trade-off, and, therefore, less meritocratic as has been postulated so far. Another avenue for future research could involve examining people's awareness of the inherent tension between upholding meritocratic fairness principles and accepting the role of luck in real-world inequalities. It remains an open question whether changes in this awareness could affect people's acceptance of inequality and demand for redistribution.

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Appendices

A Data Collection

We specified in the pre-analysis plan that we collect data in two waves. Data collection for wave 1 took place in August 2023. We collected data from 600 spectators for the brute luck, market luck, and effort benchmark treatment. As only 10% of the spectators are matched with a worker pair, we recruited 120 workers and 30 buyers through Prolific. We specified in the pre-analysis plan that we would implement data collection in wave 2 conditional on the results of wave 1. Since we found a significant effect of the market luck treatment in wave 1 (see column 1) and 2) of Appendix Table C.1), we collected data for the mechanism and the robustness treatment in wave 2 in September 2023. We chose sample sizes for these treatments such that it would allow us to detect half of the main treatment effect from wave 1 at the conventional level of significance (5%) and power (80%), as we expected the treatment effect of the mechanism to be smaller. We therefore collected data from about 450 spectators in the mechanism treatment and the robustness treatment. We further replicated the brute luck and the market luck treatment with about 250 spectators per treatment in wave 2 in order to have similar sample sizes for these four treatments across both waves of data collection. In addition, we recruited 150 buyers and 285 workers in wave 2.

We also specified in the pre-analysis plan that we would pool the data from wave 1 and wave 2 for the analysis if the implemented inequality in the brute luck and the market luck treatment are not statistically different from each other. The implemented inequality in the brute luck treatment was very similar across the two waves (Mann-Whitney $p = 0.984$), whereas implemented inequality in the market luck treatment was lower in wave 2 but not significantly different from wave 1 (Mann-Whitney $p = 0.098$). As shown in column 3) and 4) of Appendix Table C.1, we find a significant effect of the market luck treatment also in wave 2. We, therefore, pooled the data and excluded spectators with a completion time that deviated by more than two standard deviations from the mean completion time, as specified in the pre-analysis plan. Table C.2 gives an overview of the final sample, reporting the background characteristics of the spectators for each treatment.

B Figures

Figure B.1: Distribution of spectator decisions by treatment

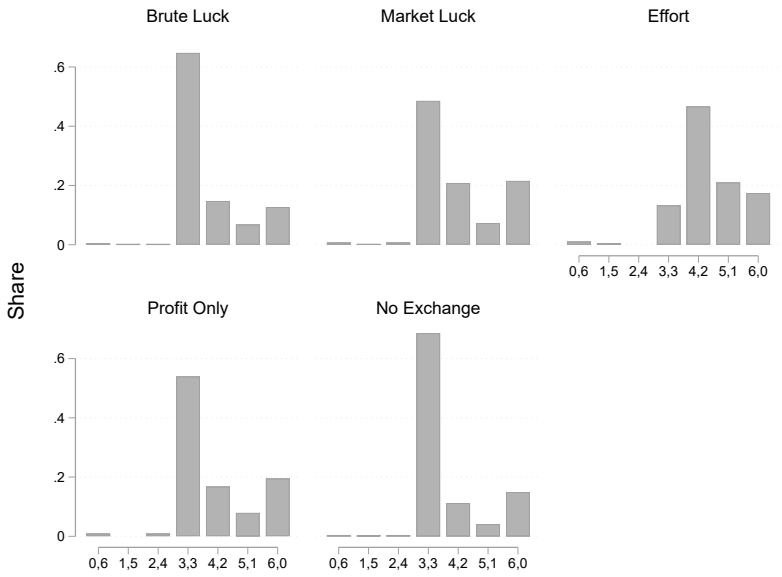
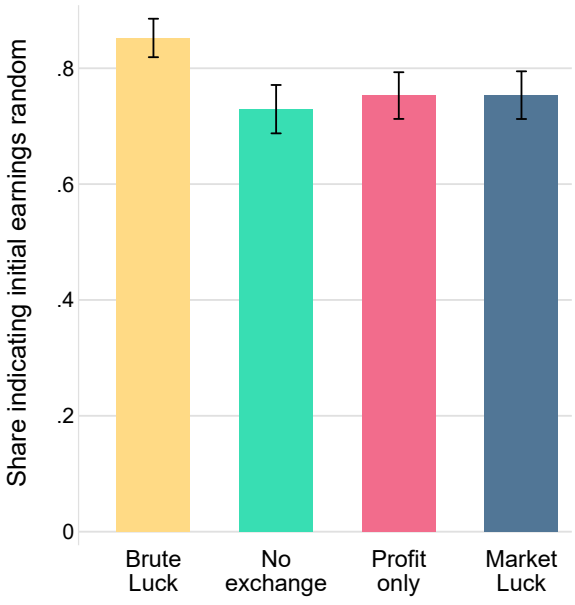
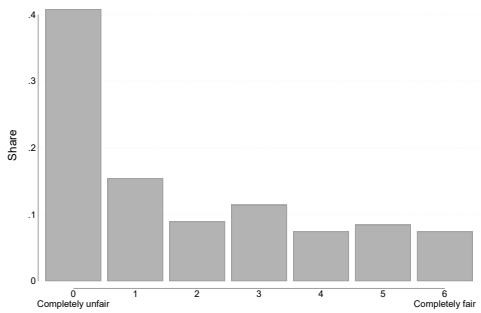


Figure B.2: Perceived randomness of initial earnings by treatment

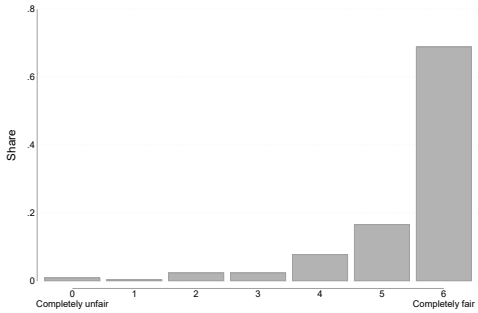


Notes: Error bars indicate the 95% confidence intervals.

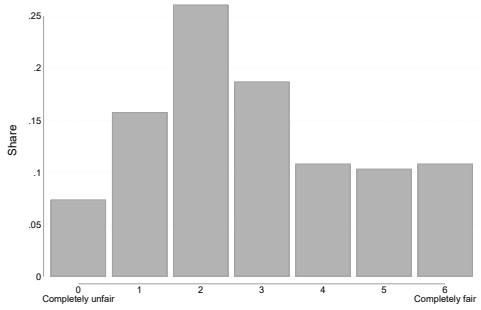
Figure B.3: Histogram of fairness evaluations by scenario



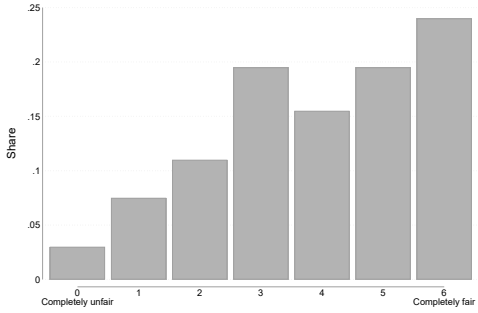
(a) Luck



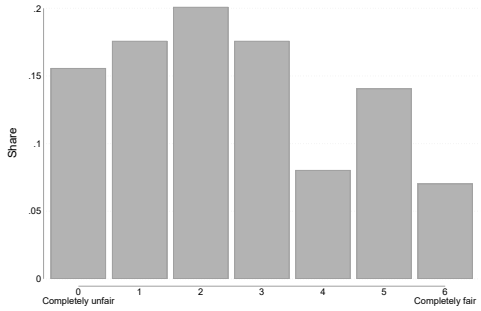
(b) Effort



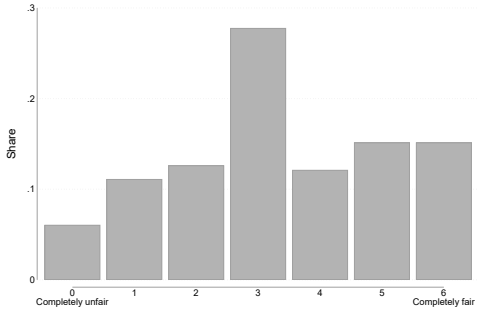
(c) SBTC loss



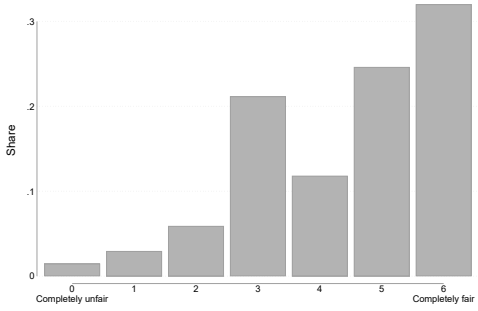
(d) SBTC gain



(e) Immigration

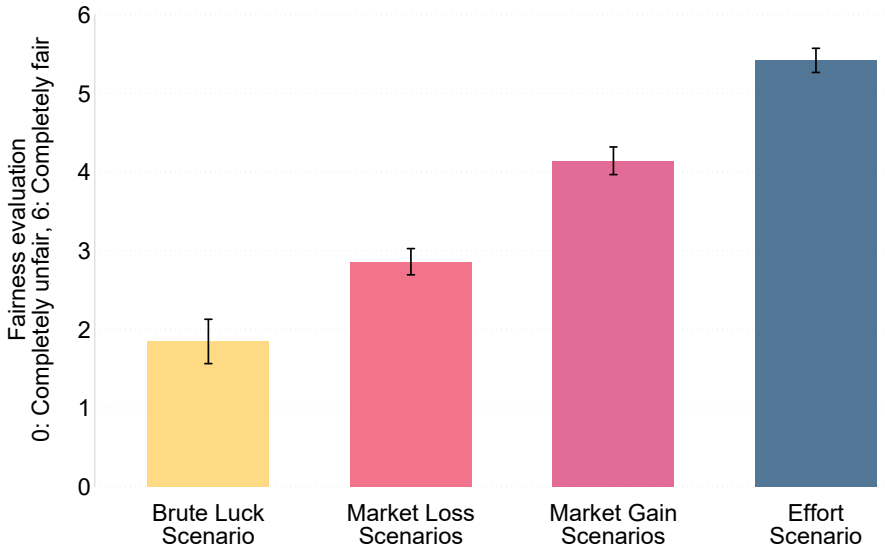


(f) Trade



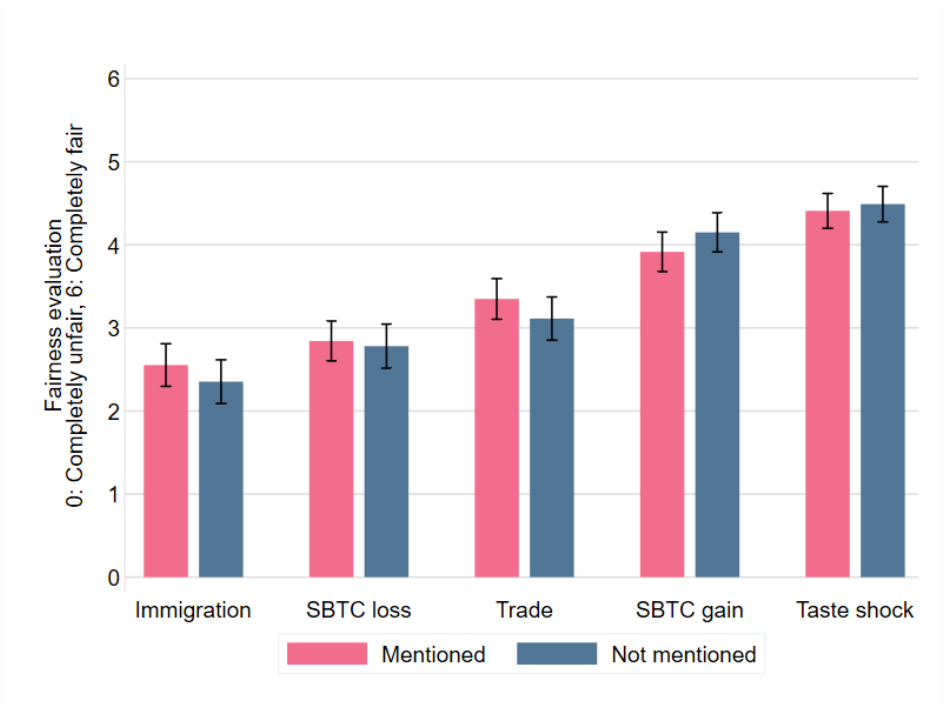
(g) Taste shock

Figure B.4: Average fairness evaluation in gain and loss market scenarios



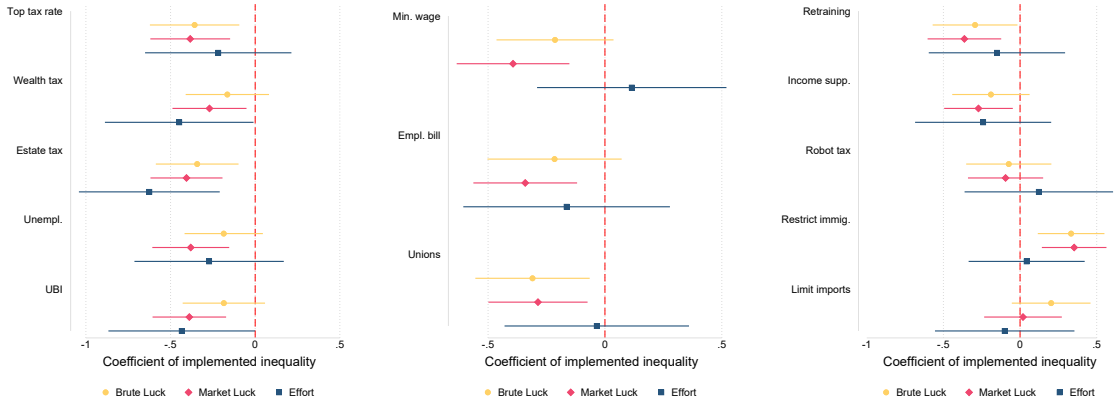
Notes: Error bars indicate the 95% confidence intervals.

Figure B.5: Anticipation of market shocks and fairness evaluations



Notes: Error bars indicate the 95% confidence intervals.

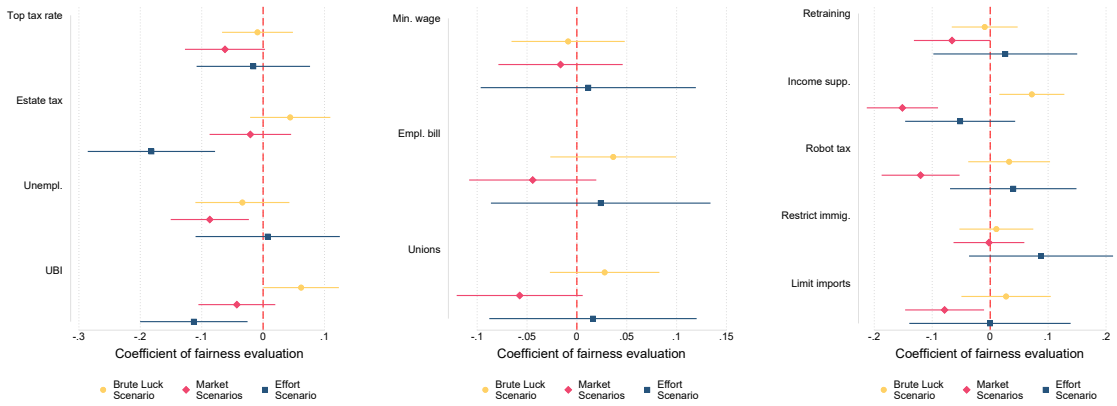
Figure B.6: Correlation of implemented inequality and support for policies (single items)



(a) Redistribution policies (b) Predistribution policies (c) Market shock policies

Notes: The figure shows the coefficient of regressing support for a policy on implemented inequality, separately by treatment. All regression include controls for spectator characteristics and wave fixed effects. Error bars indicate the 95% confidence interval.

Figure B.7: Correlation of fairness evaluations and support for policies (single items)



(a) Redistribution policies (b) Predistribution policies (c) Market shock policies

Notes: The figure shows the coefficient of regressing policy support on fairness evaluations, separately for the brute luck scenario, the average over all market scenarios, and the effort scenario. All regressions include controls for subject characteristics as specified in Table 3. Error bars indicate the 95% confidence interval.

C Tables

Table C.1: Treatment effect by wave

	Wave 1		Wave 2	
	(1)	(2)	(3)	(4)
Market Luck	0.150***	0.146***	0.092***	0.085**
	(0.041)	(0.041)	(0.033)	(0.034)
Constant	0.236***	0.294***	0.223***	0.311***
	(0.027)	(0.077)	(0.022)	(0.064)
Controls	No	Yes	No	Yes
F-stat p-val	0.000	0.000	0.006	0.002
Adj. R-squared	0.033	0.095	0.013	0.034
Observations	373	373	489	489

Notes: This table reports OLS estimates with robust standard errors in parentheses. The dependent variable is implemented inequality. Control variables include age, a female dummy, a high education dummy variable for having a Bachelor's or Post-graduate degree, a high-income dummy variable for having an income above USD 75,000, a Democrat dummy, as well as dummy variables for having an Asian, Hispanic, or Black ethnicity. Significance levels: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table C.2: Background characteristics of spectators by treatment

Variable	(1) Control Mean/(SD)	(2) Market Mean/(SD)	(3) Effort Mean/(SD)	(4) Mechanism Mean/(SD)	(5) Robustness Mean/(SD)	F-test for balance across all groups F-stat/P-value
Female	54.3	45.7	50.8	53.1	47.7	2.2*
	(49.9)	(49.9)	(50.1)	(50.0)	(50.0)	0.1
Age	45.2	45.3	46.3	45.7	45.2	0.2
	(16.0)	(16.2)	(16.6)	(15.6)	(15.7)	0.9
High education	55.9	54.5	57.4	56.7	59.2	0.5
	(49.7)	(49.9)	(49.6)	(49.6)	(49.2)	0.7
High income	38.6	38.6	43.6	39.9	43.1	0.8
	(48.7)	(48.7)	(49.7)	(49.0)	(49.6)	0.5
Democratic	62.3	60.4	65.1	67.1	60.8	1.5
	(48.5)	(49.0)	(47.8)	(47.0)	(48.9)	0.2
Black	12.0	11.8	9.7	12.0	15.4	1.2
	(32.6)	(32.4)	(29.7)	(32.6)	(36.1)	0.3
Asian	4.5	5.7	7.7	4.5	5.3	0.8
	(20.9)	(23.2)	(26.7)	(20.8)	(22.4)	0.5
Hispanic	5.5	5.7	5.6	5.0	4.4	0.3
	(22.7)	(23.2)	(23.1)	(21.8)	(20.4)	0.9
Number of observations	440	422	195	441	436	1934

Notes: *High education* is a dummy variable for having a Bachelor's or Post-graduate degree, *high income* is a dummy variable for having an income above USD 75,000. The last column shows the F-statistic and the p-value testing for joint significance across all treatments.

Table C.3: Background characteristics: Representative vs. experimental sample

	ACS	Sample
Female	50.9%	50.3%
Age $\leq$ 35	31.0%	33.6%
High education	33.0%	56.7%
High income	56.8%	40.4%
White	63.3%	75.5%
Black	11.9%	12.5%
Asian	6.3%	5.3%
Hispanic	17.2%	5.2%
Observations	2,727,672	1,934

Notes: Column "ACS" presents data from the American Community Survey (ACS) 2022. The column "Sample" describes the experimental sample. *High education* is a dummy variable for having a Bachelor's or higher, *high income* is a dummy variable for having an income above USD 75,000.

Table C.4: Regression results for luck treatments

	(1)	(2)	(3)	(4)	(5)	(6)
Profit only	0.093***	0.095***			0.105***	0.108***
	(0.029)	(0.029)			(0.028)	(0.028)
No exchange			-0.001	-0.015	0.011	-0.001
			(0.028)	(0.028)	(0.027)	(0.027)
Market Luck					0.117***	0.110***
					(0.026)	(0.026)
Constant	0.236***	0.317***	0.236***	0.322***	0.251***	0.366***
	(0.027)	(0.052)	(0.027)	(0.052)	(0.023)	(0.040)
Controls	No	Yes	No	Yes	No	Yes
F-stat p-val	0.003	0.000	0.900	0.000	0.000	0.000
Adj. R-squared	0.011	0.055	-0.002	0.052	0.018	0.055
Observations	881	881	876	876	1739	1739

Notes: This table reports OLS estimates with robust standard errors in parentheses. The dependent variable is implemented inequality. Control variables include age, a female dummy, a high education dummy variable for having a Bachelor's or Post-graduate degree, a high-income dummy variable for having an income above USD 75,000, a Democrat dummy, as well as dummy variables for having an Asian, Hispanic, or Black ethnicity. All regressions include dummy variables for the wave of data collection. Significance levels: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table C.5: Main regression results controlling for perceived randomness

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Market Luck	0.117***	0.110***	0.118***	0.111***	0.104***	0.093***	0.104***	0.093***
	(0.026)	(0.026)	(0.026)	(0.026)	(0.029)	(0.029)	(0.029)	(0.029)
Effort			0.233***	0.235***			0.241***	0.235***
			(0.034)	(0.033)			(0.042)	(0.042)
Constant	0.255***	0.323***	0.249***	0.282***	0.254***	0.316***	0.254***	0.276***
	(0.036)	(0.058)	(0.032)	(0.052)	(0.025)	(0.058)	(0.025)	(0.054)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Control random	Yes	Yes	Yes	Yes	No	No	No	No
Excl. random	No	No	No	No	Yes	Yes	Yes	Yes
F-stat p-val	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
Adj. R-squared	0.022	0.052	0.059	0.083	0.017	0.043	0.049	0.071
Observations	862	862	1057	1057	693	693	796	796

Notes: This table reports OLS estimates with robust standard errors in parentheses. The dependent variable is implemented inequality. The variable random is a dummy variable indicating whether the spectators perceived the initial income distribution as random. Control variables include age, a female dummy, a high education dummy variable for having a Bachelor's or Post-graduate degree, a high-income dummy variable for having an income above USD 75,000, a Democrat dummy, as well as dummy variables for having an Asian, Hispanic, or Black ethnicity. All regressions include dummy variables for the wave of data collection. *Control random* indicates if we include a dummy variable for the perceived randomness of the initial earnings. *Excl. random* indicates if we restrict the sample to spectators who perceived the initial earnings as random. Significance levels: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table C.6: Correlation of fairness evaluations for market scenarios

	Taste change	Immigration	Trade	SBTC gain	SBTC loss
Taste change	1.000				
Immigration	0.353***	1.000			
Trade	0.583***	0.628***	1.000		
SBTC gain	0.674***	0.206	0.548***	1.000	
SBTC loss	0.340**	0.551***	0.455***	0.496***	1.000

Notes: This table reports the correlation coefficients of the fairness evaluations for the different scenarios. Significance levels: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table C.7: Correlation coefficients of fairness evaluations

	Immigration	Trade	SBTC Loss	SBTC Gain	Taste change	Brute luck	Effort
Market attitudes	.267	.314	.255	.315	.245	.097	.158
Exposure immig.	.205	.149	.127	-.02	.001	.048	-.034
Exposure tech. change	.201	.125	.228	.093	.102	.032	.242
Exposure trade	.21	.226	.081	.149	-.001	.196	-.004
Exposure taste change	.113	.141	.051	.116	.024	.087	-.024
Efficiency	.627	.556	.497	.581	.325	.684	.622

Notes: This table reports the correlation coefficients of the fairness evaluations in the different scenarios with market attitudes, exposure to different shocks, and efficiency concerns. These variables are explained in more detail in the notes of Table 3.

Table C.8: Correlation coefficients of fairness evaluations and policy support

	Immigration	Trade	SBTC Loss	SBTC Gain	Taste change	Brute luck	Effort
Top tax rate	-.115	-.125	-.188	-.186	-.087	-.091	-.059
Estate tax	.093	.065	-.088	-.211	-.127	.125	-.28
Unempl. benefits	.03	-.18	-.231	-.2	-.133	-.086	-.025
UBI	.03	-.025	-.119	-.258	-.097	.099	-.162
Min Wage	.012	-.137	-.143	-.125	-.066	-.09	.031
Empl. bill	.04	-.111	-.1	-.135	-.155	.067	.002
Unions	.034	-.122	-.148	-.23	-.092	.079	-.026
Retraining	-.071	.002	-.22	-.152	-.02	-.112	.037
Inc. support	-.078	-.194	-.334	-.26	-.24	.15	-.088
Robot tax	-.227	-.08	-.217	-.156	-.113	.117	.004
Restrict immig.	-.104	.044	0	.179	.049	-.051	.16
Limit imports	-.09	-.054	-.063	-.042	-.079	.013	.066

Notes: This table reports the correlation coefficients of the fairness evaluations in the different scenarios with the support for different social welfare policies.

D Conceptual Framework of Labor Demand and Supply

To convey the intuition of our experiment, we present a very simple conceptual framework of labor supply and demand. The model shows how income inequality can arise due to exogenous labor demand shocks for different skills. For that, we assume that workers differ in their skill s_j. Skills can be viewed as multidimensional, where an individual could have for example art, language, or computer skills. This stands in contrast with the representation of skill as unidimensional, where workers typically are either of high or low skill but do not explicitly differ with respect to the type of skill. We abstract from the fact that there might be an exogenous (innate talent) and endogenous component (human capital investments) of skill, it is yet important that we assume that workers cannot anticipate and adapt their skills to changes in labor demand. This reflects, for example, the situation of older workers who cannot easily participate in retraining programs and change occupations. For simplicity, we also assume that there are only two types of skills, odd and even ($j \in \{odd, even\}$), and that workers are endowed with one type of skill. At the same time, j represents the type of product that is produced by a firm, and workers provide labor input L_j to produce a certain type of product. Labor input is then a function of both skill s_j and effort e:

$$L_j = f(s_j, e)$$

This definition of labor input implies that effort can be chosen independently of skill and that only workers with a specific skill can produce a particular product. Products are produced by firms using product-specific technology A_j and labor input L_j according to a simple production function:

$$Y_j = A_j f(s_j, e)^{\alpha}$$

This production function implies that there is a direct relationship between the final product and the skill of the worker, meaning that the skill of a worker can be inferred from the product she produces and vice versa. In reality, we could, for example, imagine a factory worker and a researcher working for a day, so they provide the same amount of effort, but whereas the factory worker builds a car during that time, the researcher writes a paper. The relative wages of workers with different skills are then given by the following equation:

$$\frac{w_{\text{odd}}}{w_{\text{even}}} = \underbrace{\frac{A_{\text{odd}}}{A_{\text{even}}}}_{\text{exogenous}} \quad \underbrace{\left(\frac{f(s_{\text{even}}, e)}{f(s_{\text{odd}}, e)}\right)^{1-\alpha}}_{\text{endogenous}}$$

As indicated in the equation, relative wages are determined by differences in technology, which can be considered as exogenous from the perspective of the worker, and differences

in labor input. Structural developments, such as globalization and skill-biased technological change, can then be interpreted as a shock to labor demand caused by a change in the technology ratio, which, therefore, represents market luck.

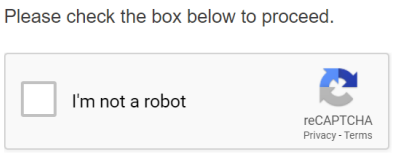
Turning now to fairness views, following the traditional way of modeling meritocratic fairness one could argue that income inequalities are only justified if they are due to the endogenous part, so because of changes in labor input. Inequalities that arise because of market luck are not accepted as they are induced by exogenous shifts in the labor demand. In our experiment, income differences between two workers with different skills arise because of the exogenous demand of a buyer, while effort, i.e., labor input, remains constant across workers. This allows us to identify the causal effect of market luck on people's inequality acceptance.

E Experimental Instructions

E.1 Online Experiment

1 Instructions for Spectators

Captcha



Consent Form

Thank you for participating in this study.

This is a survey conducted by researchers at the University of Zurich. All data collected in this survey are for research purposes only.

Task and Duration:

The study should last 20 minutes or less. You will make decisions that can have real-life consequences. It is therefore important that you read and follow the instructions carefully.

Compensation:

For your participation, you will be paid a participation compensation of USD 4.

Risk and Benefits:

The risks to you from participating in this study are those associated with basic computer tasks, including boredom, fatigue, or mild stress. The benefit to you is that you contribute to the advancement of scientific knowledge.

Confidentiality:

We will not ask for any personally identifying information about you, and all your answers are completely anonymous. The data may be published in aggregate form in scientific articles or academic presentations. Your personal identity will not be revealed.

Subject's Rights:

Your participation is voluntary. You may withdraw at any time during the study. However, if you withdraw, you will not receive any money.

For additional questions about this research, you may contact spectator-study@econ.uzh.ch.

Please indicate, in the box below, that you are at least 18 years old, a resident of the United States of America, have read and understood this consent form, and that you agree to participate in this study.

- I agree to participate in this study, am at least 18 years of age and a US resident, and have read this consent form.
- I do not want to participate in this study.

What is your Prolific ID?

Please note that this response should auto-fill with the correct ID. ____

Attention Check

This study should take 20 minutes or less to complete. It is important that you take the time to read all instructions and that you read questions carefully before you answer them. Previous research has found that some people do not take the time to read everything that is displayed. To show that you read our questions carefully, please choose both 'Monday' and 'Tuesday' as your answer in the first question and type 'darts' into the 'Other' field of the second question.

Given the above, what are your preferred days to do sports? (Click all that apply)

- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Sunday

Given the above, what is your favorite sport?

- American football
- Baseball
- Ice hockey
- Tennis
- Golf
- Wrestling
- Soccer
- Other:____

Intro

In this study we will ask you to make a **decision** that might have **real financial consequences for two other people.**

These two people have worked on a task for which they can earn money. We will explain to you in detail what the task looked like and how the earnings will be determined.

You will then have the opportunity to redistribute earnings between these two people.

Please read the following pages very carefully. A quiz will test your understanding.

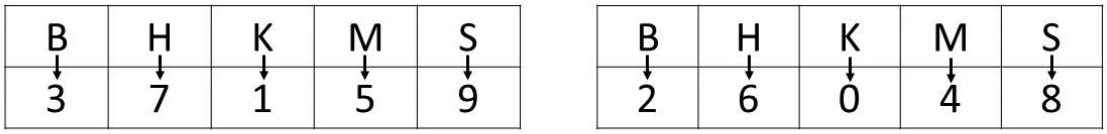
The context of your decision (Control luck treatment)

As part of this study, we recruited two individuals via an online marketplace to work on a task for which they can earn money. Let us call them **worker A and worker B**.

The role of the workers

Each of the two workers was randomly assigned to one of two tasks that are very similar. Both workers had to generate number sequences. More precisely, they had to **translate sequences of 5 letters into sequences of 5 digits** with the help of a decryption key. The decryption key that each worker received indicates which letter corresponds to which digit. The workers translated the same letter sequences. The only difference between the two tasks was that in one case, the decryption key translates letters into ***odd*** **digits** and in the other case, the decryption key translates letters into ***even*** **digits**.

The figure below illustrates the decryption keys for the two workers and a translation example.



Decryption key of Worker A

Decryption key of Worker B

Worker A: **HBKMS** → **73159**

Worker B: **HBKMS** → **62048**

Both workers had to translate 10 letter sequences correctly. Whereas **worker A** translated 10 letter sequences into **sequences of odd digits, worker B** translated 10 letter sequences into **sequences of even digits**. The amount of **effort** required to complete the task **did not differ between the two tasks**.

Payment of workers

Both workers received a participation compensation of 1 USD regardless of what they will be paid for the task.

After completing the task, they were told that their **earnings from the task would be determined by a lottery** where each worker has the **same chance** of winning the lottery. The worker **winning the lottery would earn 6 USD** for the task and the **other worker would earn nothing** for the task.

The workers were not informed about the outcome of the lottery. However, they were told that a third person – the **spectator** – is informed about the translation task and the lottery outcome. Furthermore, they were told that the spectator is given the opportunity to redistribute the earnings and thus determines how much they are paid for the task.

You are the third person, the spectator, who can decide whether to redistribute earnings.

Your decision

Your role in this study is to **decide on the final earnings** that the two workers receive. This means, you can transfer money from the worker with the high earnings to the worker with the low earnings.

In this study there are other people in your role as spectator who make the same decision as you do. Some of you will be selected to determine the final amount of money that the two workers receive. So, **your decision might be implemented** as well.

More specifically, 1 in 10 spectators is selected at random to determine final earnings. If you are selected, your decision will be implemented to determine the final money payments that workers A and B receive. **Your decision is completely anonymous, and you will not be informed whether your decision has been selected or not.**

Therefore, please take each decision seriously. It might matter a lot to two real people!

The workers will receive the payment that you choose for them within a few weeks but will not receive any further information.

Quiz

Before you make your decision, we ask you to take a **short quiz about the context of your decision**. You can receive an additional bonus payment of 0.25 USD if you answer all questions correctly.

Before taking the short quiz, do you want to read the instructions again? (Yes, No)

We now ask you to take the short quiz about the context of your decision. Which of the following statements are correct?

Each worker is randomly assigned to one of two tasks. (**True**, False)

The amount of effort required to complete the task differs between tasks. (True, **False**)

Workers A and B are equally likely to win the lottery. (**True**, False)

If your decision about the allocation of the earnings between workers A and B is selected, the two workers will receive the earnings that you chose for them. (**True**, False)

Your decision

We now want you to choose how to allocate the earnings between worker A and worker B.

Worker A and worker B both worked on the task and generated the number sequences. **Worker A won the lottery**. Hence, **worker A earned 6 USD** for the task and **worker B earned nothing** for the task.

Please state which of the following alternatives you choose:

- I do not redistribute: worker A is paid 6 USD and worker B is paid 0 USD.
- I do redistribute: worker A is paid 5 USD and worker B is paid 1 USD.
- I do redistribute: worker A is paid 4 USD and worker B is paid 2 USD.
- I do redistribute: worker A is paid 3 USD and worker B is paid 3 USD.
- I do redistribute: worker A is paid 2 USD and worker B is paid 4 USD.
- I do redistribute: worker A is paid 1 USD and worker B is paid 5 USD.
- I do redistribute: worker A is paid 0 USD and worker B is paid 6 USD.

We are interested in your thoughts that lead to your payment decision.

Please describe briefly: What was the reasoning that shaped your decision how to split the money between the two workers A and B? _____

What do you think: Before you had the chance to redistribute their earnings, were both workers equally likely to receive the high earnings (i.e., 6 USD)? (Yes, No).

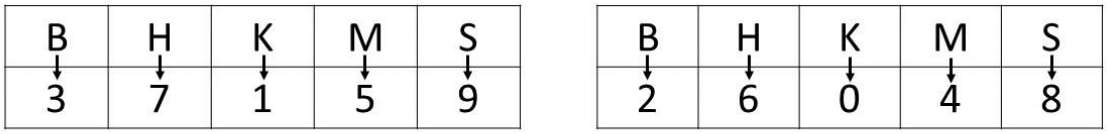
The context of your decision (Market Luck Treatment)

As part of this study, we recruited two individuals via an online marketplace to work on a task for which they can earn money. Let us call them **worker A and worker B**.

The role of the workers

Each of the two workers was randomly assigned to one of two tasks that are very similar. Both workers had to generate number sequences. More precisely, they had to **translate sequences of 5 letters into sequences of 5 digits** with the help of a decryption key. The decryption key that each worker received indicates which letter corresponds to which digit. The workers translated the same letter sequences. The only difference between the two tasks was that in one case, the decryption key translates letters into ***odd* digits** and in the other case, the decryption key translates letters into ***even* digits**.

The figure below illustrates the decryption keys for the two workers and a translation example.



Decryption key of Worker A

Decryption key of Worker B

Worker A: **HBKMS** → **73159**

Worker B: **HBKMS** → **62048**

Both workers had to translate 10 letter sequences correctly. Whereas **worker A** translated 10 letter sequences into **sequences of odd digits, worker B** translated 10 letter sequences into **sequences of even digits**. The amount of **effort** required to complete the task **did not differ between the two tasks**.

The role of the producers

Separately, we recruited other individuals who carried out a separate task for which they could earn additional money. Let us call these individuals the **producers**.

Producers could earn money if they entered and uploaded **number sequences that they bought from the workers.**

Each producer decided, at the beginning of the study, whether he or she preferred to work with odd or even numbers. According to this choice, we classify each producer as either an "odd" producer or an "even" producer. For that, we told producers that they are going to work on a task that involves numbers. We then asked producers whether they want to work with odd or even numbers.

Odd producers have chosen odd numbers and therefore **only earned money if they uploaded odd** number sequences; **even producers** have chosen even numbers and therefore **only earned money if they uploaded even** number sequences.

A producer had to buy the chosen type of number sequences from a worker and then **earned 8 USD** by uploading the sequences.

Payment of producers

Producers were offered a participation compensation of 1 USD. In addition, each producer was randomly matched with a pair of workers A and B. The producer bought the number sequences and **paid 6 USD to the worker** who translated the number sequences **that the producer has chosen at the beginning and therefore needed**. The producer then received the number sequences and earned 8 USD by uploading them.

Hence, the producer got total additional earnings of 2 USD**. In other words, the sequences of this worker created an additional income of USD 2 for the producer.**

Payment of workers

Both workers received a participation compensation of 1 USD regardless of what they will be paid for the task.

After completing the task, the workers were told that we recruited additional individuals, which we call the producers. Furthermore, the workers were told that the two of them **together are randomly matched with a producer who has chosen either odd or even numbers**. There was an equal chance that the matched producer was an odd producer or an even producer.

One worker could provide the producer with the number sequences that the producer needed. This worker earned 6 USD in addition to the participation compensation of 1 USD. The **other worker earned nothing** in addition for the task.

That is, if the workers were matched with a producer who has chosen and therefore needed odd numbers (odd producer), only the odd worker could sell his or her number sequences. Vice versa, if the workers were matched with a producer who has chosen and therefore needed even numbers (even producer), only the even worker could sell his or her number sequences.

The workers do not know whether they are matched with an odd or even producer. However, they were told that a third person – the **spectator** – is informed about the translation task, the task of the producer, and the matching with the producer. Furthermore, they were told that the spectator is given the opportunity to redistribute the earnings and thus determines how much they are paid for the task. **You are the third person, the spectator,** who can decide whether to redistribute earnings.

The figure below again illustrates how the earnings of the workers are determined.

Stage 1

Workers are randomly assigned to a task and translate number sequences.

Worker A translates odd and Worker B translates even number sequences.

Stage 2

The two workers are randomly matched with the same producer. This **producer chose** either odd or even numbers.

There is an equal chance that the matched producer is an odd producer or an even producer.

Stage 3

The worker who can provide the producer with the number sequences the producer needs earns 6 USD for the task. The producer earns 2 USD in total for buying and uploading the number sequences.

This means the number sequences of one of the workers create an additional income of 2 USD for the producer.

Your decision

Your role in this study is to **decide on the final earnings** that the two workers receive. This means, you can transfer money from the worker with the high earnings to the worker with the low earnings.

In this study there are other people in your role as spectator who make the same decision as you do. Some of you will be selected to determine the final amount of money that the two workers receive. So, **your decision might be implemented** as well.

More specifically, 1 in 10 spectators is selected at random to determine final earnings. If you are selected, your decision will be implemented to determine the final money payments that workers A and B receive. **Your decision is completely anonymous, and you will not be informed whether your decision has been selected or not.**

Therefore, please take each decision seriously. It might matter a lot to two real people!

The workers will receive the payment that you choose for them within a few weeks but will not receive any further information.

Quiz

Before you make your decision, we ask you to take a **short quiz about the context of your decision**. You can receive an additional bonus payment of 0.25 USD if you answer all questions correctly.

Before taking the short quiz, do you want to read the instructions again? (Yes, No)

We now ask you to take the short quiz about the context of your decision. Which of the following statements are correct?

Each worker is randomly assigned to one of two tasks. (**True**, False)

The amount of effort required to complete the task differs between tasks. (True, **False**)

Workers A and B are equally likely to be matched with an odd producer or with an even producer. (**True**, False)

The producers cannot choose whether they prefer to work with odd or even numbers. (True, **False**)

Even producers can only make additional earnings if they buy the number sequences from the worker who translated even numbers. (**True**, False)

If your decision about the allocation of the earnings between workers A and B is selected, the two workers will receive the earnings that you chose for them. (**True**, False)

Your decision

We now want you to choose how to allocate the earnings between worker A and worker B.

Worker A and worker B both worked on the task and generated the number sequences. They were matched with a producer who needed the number sequences that worker A generated. **Worker A sold her number sequences and was paid by the producer**. Hence, **worker A earned 6 USD** for the task and **worker B earned nothing** for the task.

Please state which of the following alternatives you choose:

- I do not redistribute: worker A is paid 6 USD and worker B is paid 0 USD.
- I do redistribute: worker A is paid 5 USD and worker B is paid 1 USD.
- I do redistribute: worker A is paid 4 USD and worker B is paid 2 USD.
- I do redistribute: worker A is paid 3 USD and worker B is paid 3 USD.
- I do redistribute: worker A is paid 2 USD and worker B is paid 4 USD.
- I do redistribute: worker A is paid 1 USD and worker B is paid 5 USD.
- I do redistribute: worker A is paid 0 USD and worker B is paid 6 USD.

Finally, we are interested in your thoughts that lead to your payment decision.

Please describe briefly: What was the reasoning that shaped your decision how to split the money between the two workers A and B? _____

What do you think: Before you had the chance to redistribute their earnings, were both workers equally likely to receive the high earnings (i.e., 6 USD)? (Yes, No).

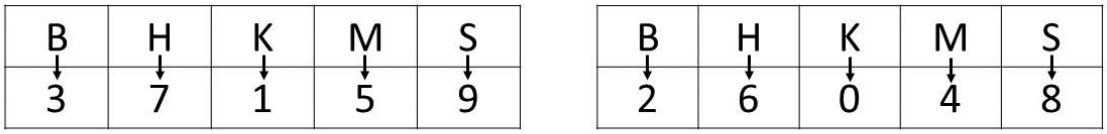
The context of your decision (Benchmark treatment)

As part of this study, we recruited two individuals via an online marketplace to work on a task for which they can earn money. Let us call them **worker A and worker B**.

The role of the workers

Each of the two workers was randomly assigned to one of two tasks that are very similar. Both workers had to generate number sequences. More precisely, they had to **translate sequences of 5 letters into sequences of 5 digits** with the help of a decryption key. The decryption key that each worker received indicates which letter corresponds to which digit. The workers translated the same letter sequences. The only difference between the two tasks was that in one case, the decryption key translates letters into ***odd* digits** and in the other case, the decryption key translates letters into ***even* digits**.

The figure below illustrates the decryption keys for the two workers and a translation example.



Decryption key of Worker A

Decryption key of Worker B

Worker A: **HBKMS** → **73159**

Worker B: **HBKMS** → **62048**

Both workers had to translate letter sequences for the same amount of time.

Payment of workers

Both workers received a participation compensation of 1 USD regardless of what they will be paid for the task.

After completing the task, they were told that their **earnings from the task would be determined by their productivity**. That is, the **worker who translated more number sequences correctly would earn 6 USD** for the task, and the **other worker would earn nothing** for the task.

The workers were not informed about their performance. However, they were told that a third person – the **spectator** – is informed about the translation task and their performance. Furthermore, they were told that the spectator is given the opportunity to redistribute the earnings and thus determines how much they are paid for the task.

You are the third person, the spectator, who can decide whether to redistribute earnings.

Your decision

Your role in this study is to **decide on the final earnings** that the two workers receive. This means, you can transfer money from the worker with the high earnings to the worker with the low earnings.

In this study, there are other people in your role as spectator who make the same decision as you do. Some of you will be selected to determine the final amount of money that the two workers receive. So, **your decision might be implemented** as well.

More specifically, 1 in 10 spectators is selected at random to determine final earnings. If you are selected, your decision will be implemented to determine the final money payments that workers A and B receive. **Your decision is completely anonymous, and you will not be informed whether your decision has been selected or not.**

Therefore, please take each decision seriously. It might matter a lot to two real people!

The workers will receive the payment that you choose for them within a few weeks but will not receive any further information.

Quiz

Before you make your decision, we ask you to take a **short quiz about the context of your decision**. You can receive an additional bonus payment of 0.25 USD if you answer all questions correctly.

Before taking the short quiz, do you want to read the instructions again? (Yes, No)

We now ask you to take the short quiz about the context of your decision. Which of the following statements are correct?

Each worker is randomly assigned to one of two tasks. (**True**, False)

The number of correctly translated sequences measures the workers' productivity. (**True**, False)

If your decision about the allocation of the earnings between workers A and B is selected, the two workers will receive the earnings that you chose for them. (**True**, False)

Your decision

We now want you to choose how to allocate the earnings between worker A and worker B.

Worker A and worker B both worked on the task and generated number sequences. **Worker A was more productive and generated more number sequences**. Hence, **worker A earned 6 USD** for the task and **worker B earned nothing** for the task.

Please state which of the following alternatives you choose:

- I do not redistribute: worker A is paid 6 USD and worker B is paid 0 USD.
- I do redistribute: worker A is paid 5 USD and worker B is paid 1 USD.
- I do redistribute: worker A is paid 4 USD and worker B is paid 2 USD.
- I do redistribute: worker A is paid 3 USD and worker B is paid 3 USD.
- I do redistribute: worker A is paid 2 USD and worker B is paid 4 USD.
- I do redistribute: worker A is paid 1 USD and worker B is paid 5 USD.
- I do redistribute: worker A is paid 0 USD and worker B is paid 6 USD.

We are interested in your thoughts that lead to your payment decision.

Please describe briefly: What was the reasoning that shaped your decision how to split the money between the two workers? _____

What do you think: Before you had the chance to redistribute their earnings, were both workers equally likely to receive the high earnings (i.e., 6 USD)? (Yes, No).

Demographics

Please tell us about yourself so we can put your other replies in greater context:

- What is your age?
- What is your gender?
    - Male
    - Female
    - Other:___
    - Rather not say
- What is the primary ethnicity or race you identify with?
    - Asian/Asian American
    - Black/African American
    - White/European American
    - Hispanic/Latino
    - Other: __
    - Rather not say
- Were you born in the United States?
    - Yes
    - No
- What was your yearly household income in 2022 in US dollars before taxes and deductions? (Note: the household income is the total amount of money earned by all members of your household)
    - Less than 15,000
    - Between 15,000 and 25,000
    - Between 25,000 and 50,000
    - Between 50,000 and 75,000
    - Between 75,000 and 100,000
    - Between 100,000 and 150,000
    - Between 150,000 and 200,000
    - More than 200,000
- What is the highest educational level that you have attained?
    - 12^{th} grade or less
    - Graduated high school or equivalent
    - Some college, no degree
    - Associate degree
    - Bachelor's degree
    - Post-graduate degree
- What is your current employment status?
    - Full-time employee
    - Part-time employee
    - Self-employed or small business owner
    - Unemployed
    - Student
    - Not in labor force (for example: retired, or full-time parent)
- In political matters, people talk of "the left" and "the right." How would you place your views on this scale, generally speaking?
  (10-point Scale: 1: Left to 10: Right)

- Do you think of yourself as closer to the Republican or Democratic party?
    - Democrat
    - Republican
    - Other: __

Support for Policies, Attitudes toward Government, and Beliefs about Inequality

In this part of the survey, we would like to know your opinion on different government policies.

In the following, you will see a list of different government policies. The list includes both policies that might already be in place and policies that are only being discussed but have not been implemented yet. Indicate for each of these policies, how strongly you support or oppose them.

- An increase in the top federal income tax rate for high-income households.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- A tax on the wealth that people inherit from deceased family members (often called an estate tax).
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- A tax on people's net wealth, this means on the value of all their assets minus their debt.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- A full employment bill in which the government guarantees a job to everyone who wants to work.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- An increase in the federal minimum wage. (The current level is 7.25 USD.)
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- An increase of unemployment benefits.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- A universal basic income, where every citizen regularly receives a cash transfer unconditional on his or her employment status.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

In this part of the survey, we are interested in your opinion about the role of the government. Indicate for each of the following statements, how strongly you agree or disagree with them:

- In general, I trust the federal government to do what is right.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- The government should limit the import of foreign products in order to protect its domestic economy.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- The government should control its borders and impose restrictions on immigration in order to protect domestic jobs.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- The government should raise a tax on robots in order to prevent workers to be replaced by machines.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- The government should provide retraining programs for workers in declining industries.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- The government should provide income support for workers in declining industries.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- The government should strengthen the position of unions.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

Finally, please tell us how strongly you agree or disagree with the following statements.

- Income differences between individuals are acceptable if they result from differences in hard work and are not acceptable if they result from differences in luck.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- Income differences between individuals are necessary because they incentivize individual effort and thereby increase overall wealth.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- In reality, hard work doesn't generally bring success - it's more a matter of luck.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

End of Survey

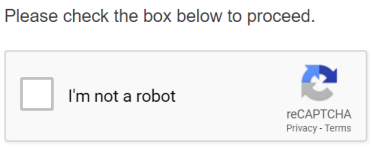
Thank you very much for participating in this study!

Do you have any comments or suggestions you would like to share with the researchers who designed this study? Is there anything you found unclear or confusing? Are there questions you had wished we asked? Please let us know what you think.

_____

2 Instructions for Workers

Captcha



Consent Form

Thank you for participating in this study.

Please read and follow all instructions carefully. Note that you will remain anonymous throughout the study. We will only use your Prolific ID to assign payment and check that you have not participated in this study before.

Task and duration. The study should last approximately 5 minutes. As part of the study, you will be working on a simple task. You will be given detailed instructions about the task. Please read the instructions carefully.

Payment. If you participate in this study, you will be paid a participation fee of 1 USD. In addition, you may earn additional money, depending on the actions you and others take. We need some time to transfer the additional payments. You will receive these payments within the next 4 weeks via a Prolific bonus transfer. We will try to be as fast as possible.

Confidentiality. We will not ask for any personally identifying information about you, and all your answers are completely anonymous. The data may be published in aggregate form in scientific articles or academic presentations. Your personal identity will not be revealed.

Subjects' rights. Your participation is voluntary. You may withdraw at any time during the study. However, if you withdraw, you will not receive any money. If you have any questions regarding this study, you may contact spectator-study@econ.uzh.ch.

Please indicate, in the box below, that you are at least 18 years old, a resident of the United States of America, have read and understood this consent form, and that you agree to participate in this study.

- I agree to participate in this study, am at least 18 years of age and a US resident, and have read this consent form.
- I do not want to participate in this study.

What is your Prolific ID?

Please note that this response should auto-fill with the correct ID. ____

Your task (Control Luck and Market Luck Treatment)

- You will be given 10 sequences of 5 **letters which you have to translate into** 10 sequences of **digits** with the help of a decryption key.
- The **decryption key tells you which letter corresponds to which even/odd number** and looks as follows:

B	H	K	M	S
↓	↓	↓	↓	↓
3	7	1	5	9

- **Please enter the number sequence in the field below the letter sequence.**
- For example, if you are given the letter sequence **HMSKB**, you should enter the number sequence **75913**.
- There will be an error message if the translated sequence is incorrect. In this case, you can reenter another sequence. Once you translated the sequence correctly, you can advance to the next sequence on the next page.
- The decryption key will be displayed on every page.
- To complete the task, you have to translate 10 sequences correctly.
- You can withdraw from the task at any point in time, but you will not receive any money in this case.

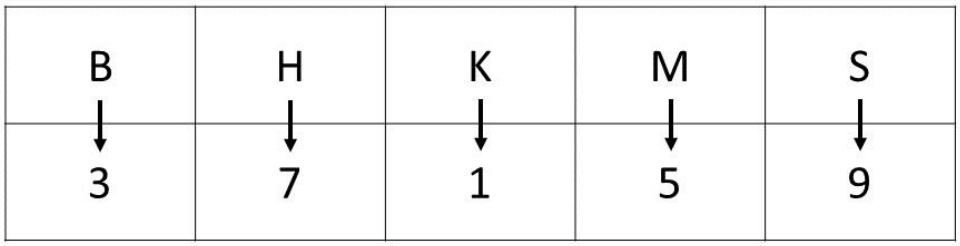
Make sure that you have read and understood the instructions. The task will start once you go to the next page.

➔ *Task: 10 letter sequences (one sequence per page with decryption key on every page)*

Congratulations, you have finished the task! Please continue to the next page to get information about your earnings.

Your task (Benchmark Effort Treatment)

- You will be given sequences of 5 **letters which you have to translate into** sequences of **digits** with the help of a decryption key.
- The **decryption key tells you which letter corresponds to which even/odd number** and looks as follows:



- **Please enter the number sequence in the field below the letter sequence.**
- For example, if you are given the letter sequence **HMSKB**, you should enter the number sequence **75913**.
- There will be an error message if the translated sequence is incorrect. In this case, you can reenter another sequence. Once you translated the sequence correctly, you can advance to the next sequence on the next page.
- The decryption key will be displayed on every page.
- You will work on this task for 3 minutes. We will measure your performance by the number of correctly translated sequences.
- You can withdraw from the task at any point in time, but you will not receive any money in this case.

Make sure that you have read and understood the instructions. The task will start once you go to the next page.

➔ *Task: Letter sequences for 3 minutes (one sequence per page with decryption key on every page)*

Congratulations, you have finished the task! Please continue to the next page to get information about your earnings.

Your earnings

We will now explain how you will be paid for your work. After you have completed this study, we will match you with another participant who has completed a similar task. The other participant decrypted the same letter sequences but with a decryption key that translates letters into odd/even numbers instead of odd/even numbers, as in your case. The payment to you and the other participant is determined by a two-stage process. Below we explain this process in more detail.

First stage: Market Luck. To determine your earnings for the task, we recruit some additional participants, whom we call the "producers". A producer can earn additional money if he or she acquires number sequences. Producers differ in that some producers can only earn money if they acquire odd numbers, and other producers can only earn money if they acquire even numbers.

You and the other participant will be matched with a randomly selected producer. The producer will not know the identity of you or the other participant but will be informed that there is a worker who translated the sequences that he or she needs.

The producer buys the number sequences either from you or the other participant. If the producer needs odd/even numbers, you earn 6 USD, and the other participant earns 0 USD. If the producer needs even/odd numbers, you earn 0 USD, and the other participant earns 6 USD.

First stage: Control Luck. For this task, the earnings of you and the other participant are determined by a lottery. Each of you has the same chance to earn 6 USD or 0 USD.

First stage: Benchmark Effort. For this task, the earnings of you and the other participant are determined by how productive you are. The participant who translated more sequences correctly earns 6 USD and the other participant earns 0 USD.

Second stage. For this part of the study, we again recruit other additional participants, whom we will call the "Spectators". A randomly selected Spectator will be given the opportunity to redistribute the earnings between you and the other participant: increasing the payment of the participant with the low earnings by 1 USD decreases the other participant's payment by 1 USD.

The spectator will not know the identity of you or the other participant but will be informed about the nature of the task and the allocation of earnings in the first stage.

If the spectator chooses not to redistribute earnings, each of you will be paid your earnings as determined in the first stage.

If the spectator chooses to redistribute earnings, you will be paid according to the distribution that the Spectator chose.

You will receive your additional payment for the task within 4 weeks and it will be paid separately from your participation fee of 1 USD.

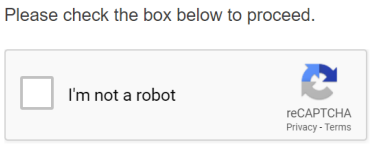
End of Survey

Thank you very much for participating in this study!

Do you have any comments or suggestions you would like to share with the researchers who designed this study? Is there anything you found unclear or confusing? Are there questions you had wished we asked? Please let us know what you think.

3 Instructions for Producers

Captcha



Consent Form

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Please read and follow all instructions carefully. Note that you will remain anonymous throughout the study, we will only use your Prolific ID to assign payment and check that you have not participated in this study before.

Task and duration. The study should last approximately 5 minutes. As part of the study, you will be working on a simple task. You will be given detailed instructions about the task. Please read the instructions carefully.

Payment. If you participate in this study, you will be paid a participation fee of 1 USD.

Confidentiality. We will not ask for any personally identifying information about you, and all your answers are completely anonymous. The data may be published in aggregate form in scientific articles or academic presentations. Your personal identity will not be revealed.

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- I do not want to participate in this study.

What is your Prolific ID?

Please note that this response should auto-fill with the correct ID. ____

Choice of numbers

In the following, you will work on a task that involves numbers.

You can now choose with which set of numbers you prefer to work. There is no right or wrong answer. Just choose the set of numbers you like more.

- 0, 2, 4, 6, 8
- 1, 3, 5, 7, 9

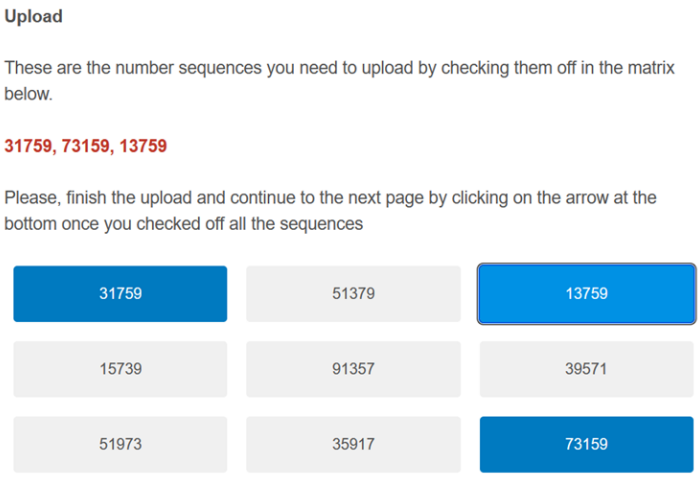
Your task

Your task in this study is to **upload sequences of 5 odd/even digits.** To do that, you will have to **buy these number sequences from another participant.** We will call this participant "the Worker". You can get additional earnings if you upload all the sequences.

We will now give you detailed information about your task. Make sure that you read and understand the instructions.

Buying and uploading the sequences:

- First, you automatically **buy** 10 number **sequences** from the Worker **for a fixed price of 6 USD**.
- You will then have to upload the number sequences.
- For that, you will be shown a list of number sequences in random order.
- To upload your number sequences, **you must find and check off each of your number sequences** from the list of number sequences by clicking on it. **Each of your 10 number sequences occurs once** in the same list.
- Below, you are shown a simplified example to make sure you understand the upload task:



Your earnings:

- If you upload all sequences, you can earn a total amount of 8 USD.
- In other words, if you upload all the sequences, **you get additional payments of 2 USD** (8 USD (upload) – 6 USD (fixed price)
- Note, that you do not earn any additional money if you check off a wrong sequence.

You will continue with the upload of the number sequences on the next page.

Upload

These are the number sequences you need to upload by checking them off in the list of numbers below.

➔ *Display number sequences*

Please, finish the upload and continue to the next page by clicking on the arrow at the bottom once you checked off all the sequences.

➔ *Matrix of number sequences*

End of Survey

You have now completed the task.

Thank you very much for participating in this study!

Do you have any comments or suggestions you would like to share with the researchers who designed this study? Is there anything you found unclear or confusing? Are there questions you wished we had asked? Please let us know what you think.

_____

Skill-Biased Inequality and Redistributive Preferences

Supplementary Material: Experimental Instructions (Wave 1)

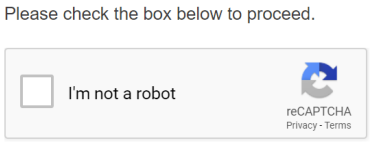
Simona Sartor and Jeffrey Yusof

University of Zurich

August 9, 2023

1 Instructions for Spectators

Captcha



Consent Form

Thank you for participating in this study.

This is a survey conducted by researchers at the University of Zurich. All data collected in this survey are for research purposes only.

Task and Duration:

The study should last 20 minutes or less. You will make decisions that can have real-life consequences. It is therefore important that you read and follow the instructions carefully.

Compensation:

For your participation, you will be paid a participation compensation of USD 4.

Risk and Benefits:

The risks to you from participating in this study are those associated with basic computer tasks, including boredom, fatigue, or mild stress. The benefit to you is that you contribute to the advancement of scientific knowledge.

Confidentiality:

We will not ask for any personally identifying information about you, and all your answers are completely anonymous. The data may be published in aggregate form in scientific articles or academic presentations. Your personal identity will not be revealed.

Subject's Rights:

Your participation is voluntary. You may withdraw at any time during the study. However, if you withdraw, you will not receive any money.

For additional questions about this research, you may contact spectator-study@econ.uzh.ch.

Please indicate, in the box below, that you are at least 18 years old, a resident of the United States of America, have read and understood this consent form, and that you agree to participate in this study.

- I agree to participate in this study, am at least 18 years of age and a US resident, and have read this consent form.
- I do not want to participate in this study.

What is your Prolific ID?

Please note that this response should auto-fill with the correct ID. ____

Attention Check

This study should take 20 minutes or less to complete. It is important that you take the time to read all instructions and that you read questions carefully before you answer them. Previous research has found that some people do not take the time to read everything that is displayed. To show that you read our questions carefully, please choose both 'Monday' and 'Tuesday' as your answer in the first question and type 'darts' into the 'Other' field of the second question.

Given the above, what are your preferred days to do sports? (Click all that apply)

- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Sunday

Given the above, what is your favorite sport?

- American football
- Baseball
- Ice hockey
- Tennis
- Golf
- Wrestling
- Soccer
- Other:____

Intro

In this study we will ask you to make a **decision** that might have **real financial consequences for two other people.**

These two people have worked on a task for which they can earn money. We will explain to you in detail what the task looked like and how the earnings will be determined.

You will then have the opportunity to redistribute earnings between these two people.

Please read the following pages very carefully. A quiz will test your understanding.

The context of your decision (Control luck treatment)

As part of this study, we recruited two individuals via an online marketplace to work on a task for which they can earn money. Let us call them **worker A and worker B**.

The role of the workers

Each of the two workers was randomly assigned to one of two tasks that are very similar. Both workers had to generate number sequences. More precisely, they had to **translate sequences of 5 letters into sequences of 5 digits** with the help of a decryption key. The decryption key that each worker received indicates which letter corresponds to which digit. The workers translated the same letter sequences. The only difference between the two tasks was that in one case, the decryption key translates letters into ***odd* digits** and in the other case, the decryption key translates letters into ***even* digits**.

The figure below illustrates the decryption keys for the two workers and a translation example.

B	H	K	M	S
↓	↓	↓	↓	↓
3	7	1	5	9

Decryption key of Worker A

B	H	K	M	S
↓	↓	↓	↓	↓
2	6	0	4	8

Decryption key of Worker B

Worker A: **HBKMS** → **73159**

Worker B: **HBKMS** → **62048**

Both workers had to translate 10 letter sequences correctly. Whereas **worker A** translated 10 letter sequences into **sequences of odd digits, worker B** translated 10 letter sequences into **sequences of even digits**. The amount of **effort** required to complete the task **did not differ between the two tasks**.

Payment of workers

Both workers received a participation compensation of 1 USD regardless of what they will be paid for the task.

After completing the task, they were told that their **earnings from the task would be determined by a lottery** where each worker has the **same chance** of winning the lottery. The worker **winning the lottery would earn 6 USD** for the task and the **other worker would earn nothing** for the task.

The workers were not informed about the outcome of the lottery. However, they were told that a third person – the **spectator** – is informed about the translation task and the lottery outcome. Furthermore, they were told that the spectator is given the opportunity to redistribute the earnings and thus determines how much they are paid for the task.

You are the third person, the spectator, who can decide whether to redistribute earnings.

Your decision

Your role in this study is to **decide on the final earnings** that the two workers receive. This means, you can transfer money from the worker with the high earnings to the worker with the low earnings.

In this study there are other people in your role as spectator who make the same decision as you do. Some of you will be selected to determine the final amount of money that the two workers receive. So, **your decision might be implemented** as well.

More specifically, 1 in 10 spectators is selected at random to determine final earnings. If you are selected, your decision will be implemented to determine the final money payments that workers A and B receive. **Your decision is completely anonymous, and you will not be informed whether your decision has been selected or not.**

Therefore, please take each decision seriously. It might matter a lot to two real people!

The workers will receive the payment that you choose for them within a few weeks but will not receive any further information.

Quiz

Before you make your decision, we ask you to take a **short quiz about the context of your decision**. You can receive an additional bonus payment of 0.25 USD if you answer all questions correctly.

Before taking the short quiz, do you want to read the instructions again? (Yes, No)

We now ask you to take the short quiz about the context of your decision. Which of the following statements are correct?

Each worker is randomly assigned to one of two tasks. (**True**, False)

The amount of effort required to complete the task differs between tasks. (True, **False**)

Workers A and B are equally likely to win the lottery. (**True**, False)

If your decision about the allocation of the earnings between workers A and B is selected, the two workers will receive the earnings that you chose for them. (**True**, False)

Your decision

We now want you to choose how to allocate the earnings between worker A and worker B.

Worker A and worker B both worked on the task and generated the number sequences. **Worker A won the lottery**. Hence, **worker A earned 6 USD** for the task and **worker B earned nothing** for the task.

Please state which of the following alternatives you choose:

- I do not redistribute: worker A is paid 6 USD and worker B is paid 0 USD.
- I do redistribute: worker A is paid 5 USD and worker B is paid 1 USD.
- I do redistribute: worker A is paid 4 USD and worker B is paid 2 USD.
- I do redistribute: worker A is paid 3 USD and worker B is paid 3 USD.
- I do redistribute: worker A is paid 2 USD and worker B is paid 4 USD.
- I do redistribute: worker A is paid 1 USD and worker B is paid 5 USD.
- I do redistribute: worker A is paid 0 USD and worker B is paid 6 USD.

We are interested in your thoughts that lead to your payment decision.

Please describe briefly: What was the reasoning that shaped your decision how to split the money between the two workers A and B? _____

What do you think: Before you had the chance to redistribute their earnings, were both workers equally likely to receive the high earnings (i.e., 6 USD)? (Yes, No).

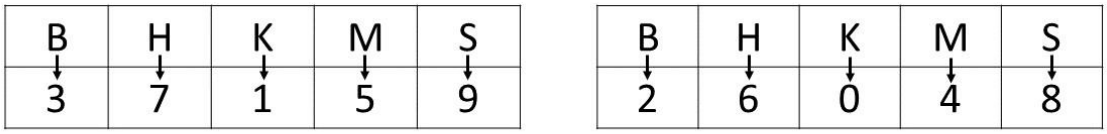
The context of your decision (Market Luck Treatment)

As part of this study, we recruited two individuals via an online marketplace to work on a task for which they can earn money. Let us call them **worker A and worker B**.

The role of the workers

Each of the two workers was randomly assigned to one of two tasks that are very similar. Both workers had to generate number sequences. More precisely, they had to **translate sequences of 5 letters into sequences of 5 digits** with the help of a decryption key. The decryption key that each worker received indicates which letter corresponds to which digit. The workers translated the same letter sequences. The only difference between the two tasks was that in one case, the decryption key translates letters into ***odd* digits** and in the other case, the decryption key translates letters into ***even* digits**.

The figure below illustrates the decryption keys for the two workers and a translation example.



Decryption key of Worker A

Decryption key of Worker B

Worker A: **HBKMS** → **73159**

Worker B: **HBKMS** → **62048**

Both workers had to translate 10 letter sequences correctly. Whereas **worker A** translated 10 letter sequences into **sequences of odd digits, worker B** translated 10 letter sequences into **sequences of even digits**. The amount of **effort** required to complete the task **did not differ between the two tasks**.

The role of the producers

Separately, we recruited other individuals who carried out a separate task for which they could earn additional money. Let us call these individuals the **producers**.

Producers could earn money if they entered and uploaded **number sequences that they bought from the workers.**

Each producer decided, at the beginning of the study, whether he or she preferred to work with odd or even numbers. According to this choice, we classify each producer as either an "odd" producer or an "even" producer. For that, we told producers that they are going to work on a task that involves numbers. We then asked producers whether they want to work with odd or even numbers.

Odd producers have chosen odd numbers and therefore **only earned money if they uploaded odd** number sequences; **even producers** have chosen even numbers and therefore **only earned money if they uploaded even** number sequences.

A producer had to buy the chosen type of number sequences from a worker and then **earned 8 USD** by uploading the sequences.

Payment of producers

Producers were offered a participation compensation of 1 USD. In addition, each producer was randomly matched with a pair of workers A and B. The producer bought the number sequences and **paid 6 USD to the worker** who translated the number sequences **that the producer has chosen at the beginning and therefore needed**. The producer then received the number sequences and earned 8 USD by uploading them.

Hence, the producer got total additional earnings of 2 USD**. In other words, the sequences of this worker created an additional income of USD 2 for the producer.**

Payment of workers

Both workers received a participation compensation of 1 USD regardless of what they will be paid for the task.

After completing the task, the workers were told that we recruited additional individuals, which we call the producers. Furthermore, the workers were told that the two of them **together are randomly matched with a producer who has chosen either odd or even numbers**. There was an equal chance that the matched producer was an odd producer or an even producer.

One worker could provide the producer with the number sequences that the producer needed. This worker earned 6 USD in addition to the participation compensation of 1 USD. The **other worker earned nothing** in addition for the task.

That is, if the workers were matched with a producer who has chosen and therefore needed odd numbers (odd producer), only the odd worker could sell his or her number sequences. Vice versa, if the workers were matched with a producer who has chosen and therefore needed even numbers (even producer), only the even worker could sell his or her number sequences.

The workers do not know whether they are matched with an odd or even producer. However, they were told that a third person – the **spectator** – is informed about the translation task, the task of the producer, and the matching with the producer. Furthermore, they were told that the spectator is given the opportunity to redistribute the earnings and thus determines how much they are paid for the task. **You are the third person, the spectator,** who can decide whether to redistribute earnings.

The figure below again illustrates how the earnings of the workers are determined.

Stage 1

Workers are randomly assigned to a task and translate number sequences.

Worker A translates odd and Worker B translates even number sequences.

Stage 2

The two workers are randomly matched with the same producer. This **producer chose** either odd or even numbers.

There is an equal chance that the matched producer is an odd producer or an even producer.

Stage 3

The worker who can provide the producer with the number sequences the producer needs earns 6 USD for the task. The producer earns 2 USD in total for buying and uploading the number sequences.

This means the number sequences of one of the workers create an additional income of 2 USD for the producer.

Your decision

Your role in this study is to **decide on the final earnings** that the two workers receive. This means, you can transfer money from the worker with the high earnings to the worker with the low earnings.

In this study there are other people in your role as spectator who make the same decision as you do. Some of you will be selected to determine the final amount of money that the two workers receive. So, **your decision might be implemented** as well.

More specifically, 1 in 10 spectators is selected at random to determine final earnings. If you are selected, your decision will be implemented to determine the final money payments that workers A and B receive. **Your decision is completely anonymous, and you will not be informed whether your decision has been selected or not.**

Therefore, please take each decision seriously. It might matter a lot to two real people!

The workers will receive the payment that you choose for them within a few weeks but will not receive any further information.

Quiz

Before you make your decision, we ask you to take a **short quiz about the context of your decision**. You can receive an additional bonus payment of 0.25 USD if you answer all questions correctly.

Before taking the short quiz, do you want to read the instructions again? (Yes, No)

We now ask you to take the short quiz about the context of your decision. Which of the following statements are correct?

Each worker is randomly assigned to one of two tasks. (**True**, False)

The amount of effort required to complete the task differs between tasks. (True, **False**)

Workers A and B are equally likely to be matched with an odd producer or with an even producer. (**True**, False)

The producers cannot choose whether they prefer to work with odd or even numbers. (True, **False**)

Even producers can only make additional earnings if they buy the number sequences from the worker who translated even numbers. (**True**, False)

If your decision about the allocation of the earnings between workers A and B is selected, the two workers will receive the earnings that you chose for them. (**True**, False)

Your decision

We now want you to choose how to allocate the earnings between worker A and worker B.

Worker A and worker B both worked on the task and generated the number sequences. They were matched with a producer who needed the number sequences that worker A generated. **Worker A sold her number sequences and was paid by the producer**. Hence, **worker A earned 6 USD** for the task and **worker B earned nothing** for the task.

Please state which of the following alternatives you choose:

- I do not redistribute: worker A is paid 6 USD and worker B is paid 0 USD.
- I do redistribute: worker A is paid 5 USD and worker B is paid 1 USD.
- I do redistribute: worker A is paid 4 USD and worker B is paid 2 USD.
- I do redistribute: worker A is paid 3 USD and worker B is paid 3 USD.
- I do redistribute: worker A is paid 2 USD and worker B is paid 4 USD.
- I do redistribute: worker A is paid 1 USD and worker B is paid 5 USD.
- I do redistribute: worker A is paid 0 USD and worker B is paid 6 USD.

Finally, we are interested in your thoughts that lead to your payment decision.

Please describe briefly: What was the reasoning that shaped your decision how to split the money between the two workers A and B? _____

What do you think: Before you had the chance to redistribute their earnings, were both workers equally likely to receive the high earnings (i.e., 6 USD)? (Yes, No).

The context of your decision (Benchmark treatment)

As part of this study, we recruited two individuals via an online marketplace to work on a task for which they can earn money. Let us call them **worker A and worker B**.

The role of the workers

Each of the two workers was randomly assigned to one of two tasks that are very similar. Both workers had to generate number sequences. More precisely, they had to **translate sequences of 5 letters into sequences of 5 digits** with the help of a decryption key. The decryption key that each worker received indicates which letter corresponds to which digit. The workers translated the same letter sequences. The only difference between the two tasks was that in one case, the decryption key translates letters into ***odd* digits** and in the other case, the decryption key translates letters into ***even* digits**.

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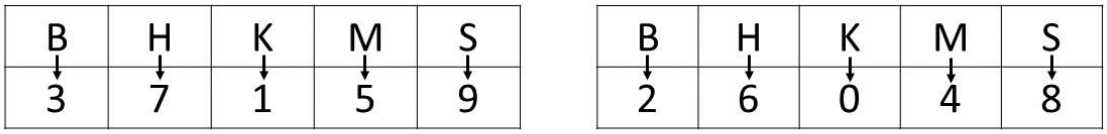


Decryption key of Worker A

Decryption key of Worker B

Worker A: **HBKMS** → **73159**

Worker B: **HBKMS** → **62048**

Both workers had to translate letter sequences for the same amount of time.

Payment of workers

Both workers received a participation compensation of 1 USD regardless of what they will be paid for the task.

After completing the task, they were told that their **earnings from the task would be determined by their productivity**. That is, the **worker who translated more number sequences correctly would earn 6 USD** for the task, and the **other worker would earn nothing** for the task.

The workers were not informed about their performance. However, they were told that a third person – the **spectator** – is informed about the translation task and their performance. Furthermore, they were told that the spectator is given the opportunity to redistribute the earnings and thus determines how much they are paid for the task.

You are the third person, the spectator, who can decide whether to redistribute earnings.

Your decision

Your role in this study is to **decide on the final earnings** that the two workers receive. This means, you can transfer money from the worker with the high earnings to the worker with the low earnings.

In this study, there are other people in your role as spectator who make the same decision as you do. Some of you will be selected to determine the final amount of money that the two workers receive. So, **your decision might be implemented** as well.

More specifically, 1 in 10 spectators is selected at random to determine final earnings. If you are selected, your decision will be implemented to determine the final money payments that workers A and B receive. **Your decision is completely anonymous, and you will not be informed whether your decision has been selected or not.**

Therefore, please take each decision seriously. It might matter a lot to two real people!

The workers will receive the payment that you choose for them within a few weeks but will not receive any further information.

Quiz

Before you make your decision, we ask you to take a **short quiz about the context of your decision**. You can receive an additional bonus payment of 0.25 USD if you answer all questions correctly.

Before taking the short quiz, do you want to read the instructions again? (Yes, No)

We now ask you to take the short quiz about the context of your decision. Which of the following statements are correct?

Each worker is randomly assigned to one of two tasks. (**True**, False)

The number of correctly translated sequences measures the workers' productivity. (**True**, False)

If your decision about the allocation of the earnings between workers A and B is selected, the two workers will receive the earnings that you chose for them. (**True**, False)

Your decision

We now want you to choose how to allocate the earnings between worker A and worker B.

Worker A and worker B both worked on the task and generated number sequences. **Worker A was more productive and generated more number sequences**. Hence, **worker A earned 6 USD** for the task and **worker B earned nothing** for the task.

Please state which of the following alternatives you choose:

- I do not redistribute: worker A is paid 6 USD and worker B is paid 0 USD.
- I do redistribute: worker A is paid 5 USD and worker B is paid 1 USD.
- I do redistribute: worker A is paid 4 USD and worker B is paid 2 USD.
- I do redistribute: worker A is paid 3 USD and worker B is paid 3 USD.
- I do redistribute: worker A is paid 2 USD and worker B is paid 4 USD.
- I do redistribute: worker A is paid 1 USD and worker B is paid 5 USD.
- I do redistribute: worker A is paid 0 USD and worker B is paid 6 USD.

We are interested in your thoughts that lead to your payment decision.

Please describe briefly: What was the reasoning that shaped your decision how to split the money between the two workers? _____

What do you think: Before you had the chance to redistribute their earnings, were both workers equally likely to receive the high earnings (i.e., 6 USD)? (Yes, No).

Demographics

Please tell us about yourself so we can put your other replies in greater context:

- What is your age?
- What is your gender?
    - Male
    - Female
    - Other:___
    - Rather not say
- What is the primary ethnicity or race you identify with?
    - Asian/Asian American
    - Black/African American
    - White/European American
    - Hispanic/Latino
    - Other: __
    - Rather not say
- Were you born in the United States?
    - Yes
    - No
- What was your yearly household income in 2022 in US dollars before taxes and deductions? (Note: the household income is the total amount of money earned by all members of your household)
    - Less than 15,000
    - Between 15,000 and 25,000
    - Between 25,000 and 50,000
    - Between 50,000 and 75,000
    - Between 75,000 and 100,000
    - Between 100,000 and 150,000
    - Between 150,000 and 200,000
    - More than 200,000
- What is the highest educational level that you have attained?
    - 12^{th} grade or less
    - Graduated high school or equivalent
    - Some college, no degree
    - Associate degree
    - Bachelor's degree
    - Post-graduate degree
- What is your current employment status?
    - Full-time employee
    - Part-time employee
    - Self-employed or small business owner
    - Unemployed
    - Student
    - Not in labor force (for example: retired, or full-time parent)
- In political matters, people talk of "the left" and "the right." How would you place your views on this scale, generally speaking?
  (10-point Scale: 1: Left to 10: Right)

- Do you think of yourself as closer to the Republican or Democratic party?
    - Democrat
    - Republican
    - Other: __

Support for Policies, Attitudes toward Government, and Beliefs about Inequality

In this part of the survey, we would like to know your opinion on different government policies.

In the following, you will see a list of different government policies. The list includes both policies that might already be in place and policies that are only being discussed but have not been implemented yet. Indicate for each of these policies, how strongly you support or oppose them.

- An increase in the top federal income tax rate for high-income households.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- A tax on the wealth that people inherit from deceased family members (often called an estate tax).
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- A tax on people's net wealth, this means on the value of all their assets minus their debt.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- A full employment bill in which the government guarantees a job to everyone who wants to work.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- An increase in the federal minimum wage. (The current level is 7.25 USD.)
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- An increase of unemployment benefits.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- A universal basic income, where every citizen regularly receives a cash transfer unconditional on his or her employment status.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

In this part of the survey, we are interested in your opinion about the role of the government. Indicate for each of the following statements, how strongly you agree or disagree with them:

- In general, I trust the federal government to do what is right.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- The government should limit the import of foreign products in order to protect its domestic economy.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- The government should control its borders and impose restrictions on immigration in order to protect domestic jobs.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- The government should raise a tax on robots in order to prevent workers to be replaced by machines.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- The government should provide retraining programs for workers in declining industries.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- The government should provide income support for workers in declining industries.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- The government should strengthen the position of unions.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

Finally, please tell us how strongly you agree or disagree with the following statements.

- Income differences between individuals are acceptable if they result from differences in hard work and are not acceptable if they result from differences in luck.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- Income differences between individuals are necessary because they incentivize individual effort and thereby increase overall wealth.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- In reality, hard work doesn't generally bring success - it's more a matter of luck.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

End of Survey

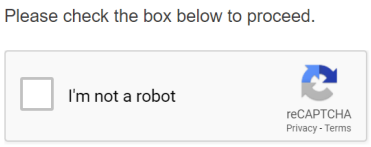
Thank you very much for participating in this study!

Do you have any comments or suggestions you would like to share with the researchers who designed this study? Is there anything you found unclear or confusing? Are there questions you had wished we asked? Please let us know what you think.

_____

2 Instructions for Workers

Captcha



Consent Form

Thank you for participating in this study.

Please read and follow all instructions carefully. Note that you will remain anonymous throughout the study. We will only use your Prolific ID to assign payment and check that you have not participated in this study before.

Task and duration. The study should last approximately 5 minutes. As part of the study, you will be working on a simple task. You will be given detailed instructions about the task. Please read the instructions carefully.

Payment. If you participate in this study, you will be paid a participation fee of 1 USD. In addition, you may earn additional money, depending on the actions you and others take. We need some time to transfer the additional payments. You will receive these payments within the next 4 weeks via a Prolific bonus transfer. We will try to be as fast as possible.

Confidentiality. We will not ask for any personally identifying information about you, and all your answers are completely anonymous. The data may be published in aggregate form in scientific articles or academic presentations. Your personal identity will not be revealed.

Subjects' rights. Your participation is voluntary. You may withdraw at any time during the study. However, if you withdraw, you will not receive any money. If you have any questions regarding this study, you may contact spectator-study@econ.uzh.ch.

Please indicate, in the box below, that you are at least 18 years old, a resident of the United States of America, have read and understood this consent form, and that you agree to participate in this study.

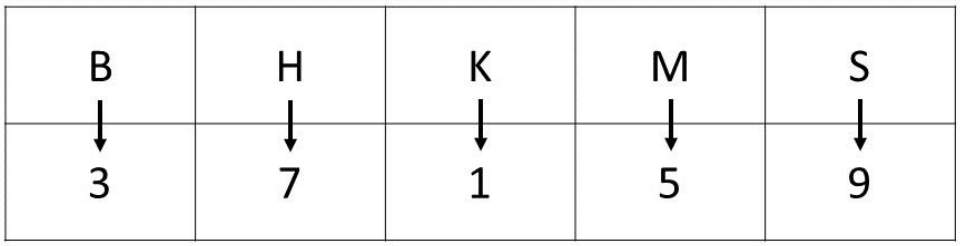
- I agree to participate in this study, am at least 18 years of age and a US resident, and have read this consent form.
- I do not want to participate in this study.

What is your Prolific ID?

Please note that this response should auto-fill with the correct ID. ____

Your task (Control Luck and Market Luck Treatment)

- You will be given 10 sequences of 5 **letters which you have to translate into** 10 sequences of **digits** with the help of a decryption key.
- The **decryption key tells you which letter corresponds to which even/odd number** and looks as follows:



- **Please enter the number sequence in the field below the letter sequence.**
- For example, if you are given the letter sequence **HMSKB**, you should enter the number sequence **75913**.
- There will be an error message if the translated sequence is incorrect. In this case, you can reenter another sequence. Once you translated the sequence correctly, you can advance to the next sequence on the next page.
- The decryption key will be displayed on every page.
- To complete the task, you have to translate 10 sequences correctly.
- You can withdraw from the task at any point in time, but you will not receive any money in this case.

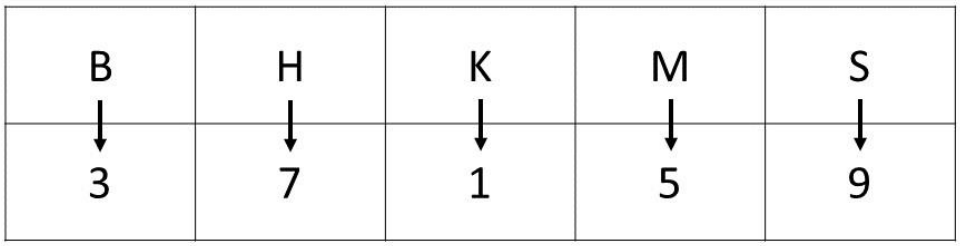
Make sure that you have read and understood the instructions. The task will start once you go to the next page.

➔ *Task: 10 letter sequences (one sequence per page with decryption key on every page)*

Congratulations, you have finished the task! Please continue to the next page to get information about your earnings.

Your task (Benchmark Effort Treatment)

- You will be given sequences of 5 **letters which you have to translate into** sequences of **digits** with the help of a decryption key.
- The **decryption key tells you which letter corresponds to which even/odd number** and looks as follows:



- **Please enter the number sequence in the field below the letter sequence.**
- For example, if you are given the letter sequence **HMSKB**, you should enter the number sequence **75913**.
- There will be an error message if the translated sequence is incorrect. In this case, you can reenter another sequence. Once you translated the sequence correctly, you can advance to the next sequence on the next page.
- The decryption key will be displayed on every page.
- You will work on this task for 3 minutes. We will measure your performance by the number of correctly translated sequences.
- You can withdraw from the task at any point in time, but you will not receive any money in this case.

Make sure that you have read and understood the instructions. The task will start once you go to the next page.

➔ *Task: Letter sequences for 3 minutes (one sequence per page with decryption key on every page)*

Congratulations, you have finished the task! Please continue to the next page to get information about your earnings.

Your earnings

We will now explain how you will be paid for your work. After you have completed this study, we will match you with another participant who has completed a similar task. The other participant decrypted the same letter sequences but with a decryption key that translates letters into odd/even numbers instead of odd/even numbers, as in your case. The payment to you and the other participant is determined by a two-stage process. Below we explain this process in more detail.

First stage: Market Luck. To determine your earnings for the task, we recruit some additional participants, whom we call the "producers". A producer can earn additional money if he or she acquires number sequences. Producers differ in that some producers can only earn money if they acquire odd numbers, and other producers can only earn money if they acquire even numbers.

You and the other participant will be matched with a randomly selected producer. The producer will not know the identity of you or the other participant but will be informed that there is a worker who translated the sequences that he or she needs.

The producer buys the number sequences either from you or the other participant. If the producer needs odd/even numbers, you earn 6 USD, and the other participant earns 0 USD. If the producer needs even/odd numbers, you earn 0 USD, and the other participant earns 6 USD.

First stage: Control Luck. For this task, the earnings of you and the other participant are determined by a lottery. Each of you has the same chance to earn 6 USD or 0 USD.

First stage: Benchmark Effort. For this task, the earnings of you and the other participant are determined by how productive you are. The participant who translated more sequences correctly earns 6 USD and the other participant earns 0 USD.

Second stage. For this part of the study, we again recruit other additional participants, whom we will call the "Spectators". A randomly selected Spectator will be given the opportunity to redistribute the earnings between you and the other participant: increasing the payment of the participant with the low earnings by 1 USD decreases the other participant's payment by 1 USD.

The spectator will not know the identity of you or the other participant but will be informed about the nature of the task and the allocation of earnings in the first stage.

If the spectator chooses not to redistribute earnings, each of you will be paid your earnings as determined in the first stage.

If the spectator chooses to redistribute earnings, you will be paid according to the distribution that the Spectator chose.

You will receive your additional payment for the task within 4 weeks and it will be paid separately from your participation fee of 1 USD.

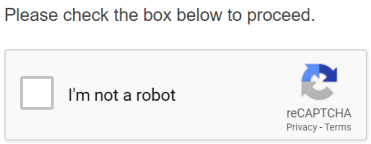
End of Survey

Thank you very much for participating in this study!

Do you have any comments or suggestions you would like to share with the researchers who designed this study? Is there anything you found unclear or confusing? Are there questions you had wished we asked? Please let us know what you think.

3 Instructions for Producers

Captcha



Consent Form

Thank you for participating in this study.

Please read and follow all instructions carefully. Note that you will remain anonymous throughout the study, we will only use your Prolific ID to assign payment and check that you have not participated in this study before.

Task and duration. The study should last approximately 5 minutes. As part of the study, you will be working on a simple task. You will be given detailed instructions about the task. Please read the instructions carefully.

Payment. If you participate in this study, you will be paid a participation fee of 1 USD.

Confidentiality. We will not ask for any personally identifying information about you, and all your answers are completely anonymous. The data may be published in aggregate form in scientific articles or academic presentations. Your personal identity will not be revealed.

Subjects' rights. Your participation is voluntary. You may withdraw at any time during the study. However, if you withdraw, you will not receive any money. If you have any questions regarding this study, you may contact spectator-study@econ.uzh.ch .

Please indicate, in the box below, that you are at least 18 years old, a resident of the United States of America, have read and understood this consent form, and that you agree to participate in this study.

- I agree to participate in this study, am at least 18 years of age and a US resident, and have read this consent form.
- I do not want to participate in this study.

What is your Prolific ID?

Please note that this response should auto-fill with the correct ID. ____

Choice of numbers

In the following, you will work on a task that involves numbers.

You can now choose with which set of numbers you prefer to work. There is no right or wrong answer. Just choose the set of numbers you like more.

- 0, 2, 4, 6, 8
- 1, 3, 5, 7, 9

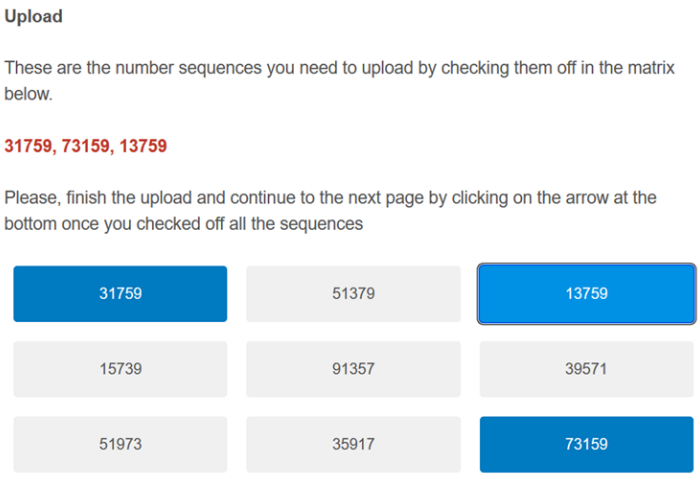
Your task

Your task in this study is to **upload sequences of 5 odd/even digits.** To do that, you will have to **buy these number sequences from another participant.** We will call this participant "the Worker". You can get additional earnings if you upload all the sequences.

We will now give you detailed information about your task. Make sure that you read and understand the instructions.

Buying and uploading the sequences:

- First, you automatically **buy** 10 number **sequences** from the Worker **for a fixed price of 6 USD**.
- You will then have to upload the number sequences.
- For that, you will be shown a list of number sequences in random order.
- To upload your number sequences, **you must find and check off each of your number sequences** from the list of number sequences by clicking on it. **Each of your 10 number sequences occurs once** in the same list.
- Below, you are shown a simplified example to make sure you understand the upload task:



Your earnings:

- If you upload all sequences, you can earn a total amount of 8 USD.
- In other words, if you upload all the sequences, **you get additional payments of 2 USD** (8 USD (upload) – 6 USD (fixed price)
- Note, that you do not earn any additional money if you check off a wrong sequence.

You will continue with the upload of the number sequences on the next page.

Upload

These are the number sequences you need to upload by checking them off in the list of numbers below.

➔ *Display number sequences*

Please, finish the upload and continue to the next page by clicking on the arrow at the bottom once you checked off all the sequences.

➔ *Matrix of number sequences*

End of Survey

You have now completed the task.

Thank you very much for participating in this study!

Do you have any comments or suggestions you would like to share with the researchers who designed this study? Is there anything you found unclear or confusing? Are there questions you wished we had asked? Please let us know what you think.

_____

Skill-Biased Inequality and Redistributive Preferences

Supplementary Material: Experimental Instructions (Wave 2)

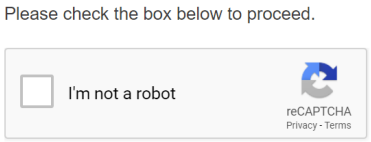
Simona Sartor and Jeffrey Yusof

University of Zurich

September 12, 2023

1 Instructions for Spectators

Captcha



Consent Form

Thank you for participating in this study.

This is a survey being conducted by researchers at the University of Zurich. All data collected in this survey are for research purposes only.

Task and Duration:

The study should last 20 minutes or less. You will make decisions that can have real-life consequences. It is therefore important that you read and follow the instructions carefully.

Compensation:

For your participation, you will be paid a participation compensation of USD 4.

Risk and Benefits:

The risks to you from participating in this study are those associated with basic computer tasks, including boredom, fatigue, or mild stress. The benefit to you is that you contribute to the advancement of scientific knowledge.

Confidentiality:

We will not ask for any personally identifying information about you, and all your answers are completely anonymous. The data may be published in aggregate form in scientific articles or academic presentations. Your personal identity will not be revealed.

Subject's Rights:

Your participation is voluntary. You may withdraw at any time during the study. However, if you withdraw, you will not receive any money.

For additional questions about this research, you may contact spectator-study@econ.uzh.ch.

Please indicate, in the box below, that you are at least 18 years old, a resident of the United States of America, have read and understood this consent form, and that you agree to participate in this study.

- I agree to participate in this study, am at least 18 years of age and a US resident, and have read this consent form.
- I do not want to participate in this study.

What is your Prolific ID?
Please note that this response should auto-fill with the correct ID. ____

Attention Check

This study should take 20 minutes or less to complete. It is important that you take the time to read all instructions and that you read questions carefully before you answer them. Previous research has found that some people do not take the time to read everything that is displayed. To show that you read our questions carefully, please choose both 'Monday and 'Tuesday as your answer in the first question and type 'darts' into the 'Other' field of the second question.

Given the above, what are your preferred days to do sports? (Click all that apply)

- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Sunday

Given the above, what is your favorite sport?

- American football
- Baseball
- Ice hockey
- Tennis
- Golf
- Wrestling
- Soccer
- Other:____

Intro

In this study we will ask you to make a **decision** that might have **real financial consequences for two other people.**

These two people have worked on a task for which they can earn money. We will explain to you in detail what the task looked like and how the earnings will be determined.

You will then have the opportunity to redistribute earnings between these two people.

Please read the following pages very carefully. A quiz will test your understanding.

The context of your decision (Control luck treatment)

As part of this study, we recruited two individuals via an online marketplace to work on a task for which they can earn money. Let us call them **worker A and worker B**.

The role of the workers

Each of the two workers was randomly assigned to one of two tasks that are very similar. Both workers had to generate number sequences. More precisely, they had to **translate sequences of 5 letters into sequences of 5 digits** with the help of a decryption key. The decryption key that each worker received indicates which letter corresponds to which digit. The workers translated the same letter sequences. The only difference between the two tasks was that in one case, the decryption key translates letters into ***odd* digits** and in the other case, the decryption key translates letters into ***even* digits**.

The figure below illustrates the decryption keys for the two workers and a translation example.

B	H	K	M	S
↓	↓	↓	↓	↓
3	7	1	5	9

Decryption key of Worker A

B	H	K	M	S
↓	↓	↓	↓	↓
2	6	0	4	8

Decryption key of Worker B

Worker A: **HBKMS** → **73159**

Worker B: **HBKMS** → **62048**

Both workers had to translate 10 letter sequences correctly. Whereas **worker A** translated 10 letter sequences into **sequences of odd digits, worker B** translated 10 letter sequences into **sequences of even digits**. The amount of **effort** required to complete the task **did not differ between the two tasks**.

Payment of workers

Both workers received a participation compensation of 1 USD regardless of what they will be paid for the task.

After completing the task, they were told that their **earnings from the task would be determined by a lottery** where each worker has the **same chance** of winning the lottery. The worker **winning the lottery would earn 6 USD** for the task and the **other worker would earn nothing** for the task.

The workers were not informed about the outcome of the lottery. However, they were told that a third person – the **spectator** – is informed about the translation task and the lottery outcome. Furthermore, they were told that the spectator is given the opportunity to redistribute the earnings and thus determines how much they are paid for the task.

You are the third person, the spectator, who can decide whether to redistribute earnings.

Your decision

Your role in this study is to **decide on the final earnings** that the two workers receive. This means, you can transfer money from the worker with the high earnings to the worker with the low earnings.

In this study there are other people in your role as spectator who make the same decision as you do. Some of you will be selected to determine the final amount of money that the two workers receive. So, **your decision might be implemented** as well.

More specifically, one out of every ten spectators is randomly selected to determine the final earnings. If you are selected, your decision will be implemented to determine the final money payments that workers A and B receive. **Your decision is completely anonymous, and you will not be informed whether your decision has been selected or not.**

Therefore, please take each decision seriously. It might matter a lot to two real people!

The workers will receive the payment that you choose for them within a few weeks but will not receive any further information.

Quiz

Before you make your decision, we ask you to take a **short quiz about the context of your decision**. You can receive an additional bonus payment of 0.25 USD if you answer all questions correctly.

Before taking the short quiz, do you want to read the instructions again? (Yes, No)

We now ask you to take the short quiz about the context of your decision. Which of the following statements are correct?

Each worker is randomly assigned to one of two tasks. (**True**, False)

The amount of effort required to complete the task differs between tasks. (True, **False**)

Workers A and B are equally likely to win the lottery. (**True**, False)

If your decision about the allocation of the earnings between workers A and B is selected, the two workers will receive the earnings that you chose for them. (**True**, False)

Your decision

We now want you to choose how to allocate the earnings between worker A and worker B.

Worker A and worker B both worked on the task and generated the number sequences. **Worker A won the lottery**. Hence, **worker A earned 6 USD** for the task and **worker B earned nothing** for the task.

Please state which of the following alternatives you choose:

- I do not redistribute: worker A is paid 6 USD and worker B is paid 0 USD.
- I do redistribute: worker A is paid 5 USD and worker B is paid 1 USD.

- I do redistribute: worker A is paid 4 USD and worker B is paid 2 USD.
- I do redistribute: worker A is paid 3 USD and worker B is paid 3 USD.
- I do redistribute: worker A is paid 2 USD and worker B is paid 4 USD.
- I do redistribute: worker A is paid 1 USD and worker B is paid 5 USD.
- I do redistribute: worker A is paid 0 USD and worker B is paid 6 USD.

We are interested in your thoughts that lead to your payment decision.

Please describe briefly: What was the reasoning that shaped your decision how to split the money between the two workers A and B? _____

What do you think: Before you had the chance to redistribute their earnings, were both workers equally likely to receive the high earnings (i.e., 6 USD)? (Yes, No).

The context of your decision (Market luck treatment)

As part of this study, we recruited two individuals via an online marketplace to work on a task for which they can earn money. Let us call them **worker A and worker B**.

The role of the workers

Each of the two workers was randomly assigned to one of two tasks that are very similar. Both workers had to generate number sequences. More precisely, they had to **translate sequences of 5 letters into sequences of 5 digits** with the help of a decryption key. The decryption key that each worker received indicates which letter corresponds to which digit. The workers translated the same letter sequences. The only difference between the two tasks was that in one case, the decryption key translates letters into ***odd* digits** and in the other case, the decryption key translates letters into ***even* digits**.

The figure below illustrates the decryption keys for the two workers and a translation example.

B	H	K	M	S
↓	↓	↓	↓	↓
3	7	1	5	9

Decryption key of Worker A

B	H	K	M	S
↓	↓	↓	↓	↓
2	6	0	4	8

Decryption key of Worker B

Worker A: **HBKMS** → **73159**

Worker B: **HBKMS** → **62048**

Both workers had to translate 10 letter sequences correctly. Whereas **worker A** translated 10 letter sequences into **sequences of odd digits, worker B** translated 10 letter sequences into **sequences of even digits**. The amount of **effort** required to complete the task **did not differ between the two tasks**.

The role of the producers

Separately, we recruited other individuals who carried out a separate task for which they could earn additional money. Let us call these individuals the **producers**.

Producers could earn money if they entered and uploaded **number sequences that they bought from the workers.**

Each producer could choose, at the beginning of the study, whether he or she preferred to work with odd or even numbers. According to this choice, we classify each producer as either an "odd" producer or an "even" producer. For that, we told producers that they are going to work on a task that involves numbers. We then asked producers whether they want to work with odd or even numbers.

Odd producers have chosen odd numbers and therefore **only earned money if they uploaded odd** number sequences; **even producers** have chosen even numbers and therefore **only earned money if they uploaded even** number sequences.

A producer had to buy the chosen type of number sequences from a worker and then **earned 8 USD** by uploading the sequences.

Payment of producers

Producers were offered a participation compensation of 1 USD. In addition, each producer was randomly matched with a pair of workers A and B.

The producer bought the number sequences and **paid 6 USD to the worker who translated the number sequences that the producer has chosen at the beginning and therefore needed**. The producer then received the number sequences and earned 8 USD by uploading them.

Hence, the producer got total additional earnings of 2 USD**. In other words, the sequences of this worker created an additional income of USD 2 for the producer.**

Payment of workers

Both workers received a participation compensation of 1 USD regardless of what they will be paid for the task.

After completing the task, the workers were told that we recruited additional individuals, which we call the producers. Furthermore, the workers were told that the two of them **together are randomly matched with a producer who has chosen either odd or even numbers**. There was an equal chance that the matched producer was an odd producer or an even producer.

One worker could provide the producer with the number sequences that the producer needed. This worker earned 6 USD in addition to the participation compensation of 1 USD. **The other worker earned nothing** in addition for the task.

That is, if the workers were matched with a producer who has chosen and therefore needed odd numbers (odd producer), only the odd worker could sell his or her number sequences. Vice versa, if the workers were matched with a producer who has chosen and therefore needed even numbers (even producer), only the even worker could sell his or her number sequences.

The workers do not know whether they are matched with an odd or even producer. However, they were told that a third person – the **spectator** – is informed about the translation task, the task of the producer, and the matching with the producer. Furthermore, they were told that the spectator is given the opportunity to redistribute the earnings and thus determines how much they are paid for the task.

You are the third person, the spectator, who can decide whether to redistribute earnings.

The figure below again illustrates how the earnings of the workers are determined.

Stage 1

Workers are randomly assigned to a task and translate number sequences.

Worker A translates odd and Worker B translates even number sequences.

Stage 2

The two workers are randomly matched with the same producer. This **producer chose** either odd or even numbers.

There is an equal chance that the matched producer is an odd producer or an even producer.

Stage 3

The worker who can provide the producer with the number sequences the producer needs earns 6 USD for the task. The producer earns 2 USD in total for buying and uploading the number sequences.

This means the number sequences of one of the workers create an additional income of 2 USD for the producer.

Your decision

Your role in this study is to **decide on the final earnings** that the two workers receive. This means, you can transfer money from the worker with the high earnings to the worker with the low earnings.

In this study there are other people in your role as spectator who make the same decision as you do. Some of you will be selected to determine the final amount of money that the two workers receive. So, **your decision might be implemented** as well.

More specifically, one out of every ten spectators is randomly selected to determine the final earnings. If you are selected, your decision will be implemented to determine the final money payments that workers A and B receive. **Your decision is completely anonymous, and you will not be informed whether your decision has been selected or not.**

Therefore, please take each decision seriously. It might matter a lot to two real people!

The workers will receive the payment that you choose for them within a few weeks but will not receive any further information.

Quiz

Before you make your decision, we ask you to take a **short quiz about the context of your decision**.

You can receive an additional bonus payment of 0.25 USD if you answer all questions correctly.

Before taking the short quiz, do you want to read the instructions again? (Yes, No)

We now ask you to take the short quiz about the context of your decision. Which of the following statements are correct?

Each worker is randomly assigned to one of two tasks. (**True**, False)

The amount of effort required to complete the task differs between tasks. (True, **False**)

Workers A and B are equally likely to be matched with an odd producer or with an even producer. (**True**, False)

The producers cannot choose whether they prefer to work with odd or even numbers. (True, **False**)

Odd producers can only make additional earnings if they buy the number sequences from the worker who translated odd numbers. (**True**, False)

If your decision about the allocation of the earnings between workers A and B is selected, the two workers will receive the earnings that you chose for them. (**True**, False)

Your decision

We now want you to choose how to allocate the earnings between worker A and worker B.

Worker A and worker B both worked on the task and generated the number sequences. They were matched with a producer who needed the number sequences that worker A generated. **Worker A sold her number sequences and was paid by the producer**. Hence, **worker A earned 6 USD** for the task and **worker B earned nothing** for the task.

Please state which of the following alternatives you choose:

- I do not redistribute: worker A is paid 6 USD and worker B is paid 0 USD.
- I do redistribute: worker A is paid 5 USD and worker B is paid 1 USD.
- I do redistribute: worker A is paid 4 USD and worker B is paid 2 USD.
- I do redistribute: worker A is paid 3 USD and worker B is paid 3 USD.
- I do redistribute: worker A is paid 2 USD and worker B is paid 4 USD.
- I do redistribute: worker A is paid 1 USD and worker B is paid 5 USD.
- I do redistribute: worker A is paid 0 USD and worker B is paid 6 USD.

Finally, we are interested in your thoughts that lead to your payment decision.

Please describe briefly: What was the reasoning that shaped your decision how to split the money between the two workers A and B? _____

What do you think: Before you had the chance to redistribute their earnings, were both workers equally likely to receive the high earnings (i.e., 6 USD)? (Yes, No).

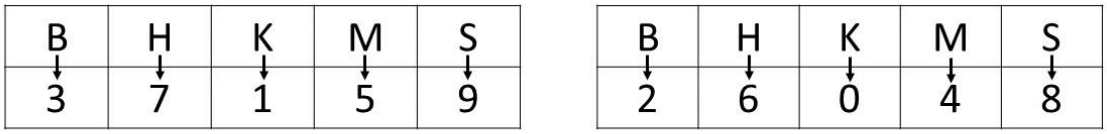
The context of your decision (Mechanism Treatment)

As part of this study, we recruited two individuals via an online marketplace to work on a task for which they can earn money. Let us call them **worker A and worker B**.

The role of the workers

Each of the two workers was randomly assigned to one of two tasks that are very similar. Both workers had to generate number sequences. More precisely, they had to **translate sequences of 5 letters into sequences of 5 digits** with the help of a decryption key. The decryption key that each worker received indicates which letter corresponds to which digit. The workers translated the same letter sequences. The only difference between the two tasks was that in one case, the decryption key translates letters into ***odd* digits** and in the other case, the decryption key translates letters into ***even* digits**.

The figure below illustrates the decryption keys for the two workers and a translation example.



Decryption key of Worker A

Decryption key of Worker B

Worker A: **HBKMS** → **73159**

Worker B: **HBKMS** → **62048**

Both workers had to translate 10 letter sequences correctly. Whereas **worker A** translated 10 letter sequences into **sequences of odd digits, worker B** translated 10 letter sequences into **sequences of even digits**. The amount of **effort** required to complete the task **did not differ between the two tasks**.

The role of the producers

Separately, we recruited other individuals who carried out a separate task for which they could earn additional money. Let us call these individuals the **producers**.

Producers could earn money if they entered and uploaded **number sequences that they bought from the workers.**

Each producer was either an **"odd"** producer **or** an **"even"** producer. Whether a producer is classified as an odd or an even producer was randomly determined by a lottery.

Odd producers only earned money if they uploaded odd number sequences; **even producers only earned money if they uploaded even** number sequences.

A producer had to buy the number sequences from a worker and then **earned 8 USD** by uploading the sequences.

Payment of producers

Producers were offered a participation compensation of 1 USD. In addition, each producer was randomly matched with a pair of workers A and B.

The producer bought the number sequences and **paid 6 USD to the worker who translated the number sequences that the producer needed**. The producer then received the number sequences and earned 8 USD by uploading them.

Hence, the producer got total additional earnings of 2 USD**. In other words, the sequences of this worker created an additional income of USD 2 for the producer.**

Payment of workers

Both workers received a participation compensation of 1 USD regardless of what they will be paid for the task.

After completing the task, the workers were told that we recruited additional individuals, which we call the producers. Furthermore, the workers were told that the two of them **together are randomly matched with a producer who needed either odd or even numbers**. There was an equal chance that the matched producer was an odd producer or an even producer.

One worker could provide the producer with the number sequences that the producer needed. This worker earned 6 USD in addition to the participation compensation of 1 USD. The other worker earned nothing in addition for the task.

That is, if the workers were matched with a producer who needed odd numbers (odd producer), only the odd worker could sell his or her number sequences. Vice versa, if the workers were matched with a producer who needed even numbers (even producer), only the even worker could sell his or her number sequences.

The workers do not know whether they are matched with an odd or even producer. However, they were told that a third person – the **spectator** – is informed about the translation task, the task of the producer, and the matching with the producer. Furthermore, they were told that the spectator is given the opportunity to redistribute the earnings and thus determines how much they are paid for the task. **You are the third person, the spectator,** who can decide whether to redistribute earnings.

The figure below again illustrates how the earnings of the workers are determined.

Stage 1

Workers are randomly assigned to a task and translate number sequences.

Worker A translates odd and Worker B translates even number sequences.

Stage 2

The two workers are randomly matched with the same producer. This producer was randomly assigned to be an odd or even producer.

There is an equal chance that the matched producer is an odd producer or an even producer.

Stage 3

The worker who can provide the producer with the number sequences the producer needs earns 6 USD for the task. The producer earns 2 USD in total for buying and uploading the number sequences.

This means the number sequences of one of the workers create an additional income of 2 USD for the producer.

Your decision

Your role in this study is to **decide on the final earnings** that the two workers receive. This means, you can transfer money from the worker with the high earnings to the worker with the low earnings.

In this study there are other people in your role as spectator who make the same decision as you do. Some of you will be selected to determine the final amount of money that the two workers receive. So, **your decision might be implemented** as well.

More specifically, one out of every ten spectators is randomly selected to determine the final earnings. If you are selected, your decision will be implemented to determine the final money payments that workers A and B receive. **Your decision is completely anonymous, and you will not be informed whether your decision has been selected or not.**

Therefore, please take your decision seriously. It might matter a lot to two real people!

The workers will receive the payment that you choose for them within a few weeks but will not receive any further information.

Quiz

Before you make your decision, we ask you to take a **short quiz about the context of your decision**.

You can receive an additional bonus payment of 0.25 USD if you answer all questions correctly.

Before taking the short quiz, do you want to read the instructions again? (Yes, No)

We now ask you to take the short quiz about the context of your decision. Which of the following statements are correct?

Each worker is randomly assigned to one of two tasks. (**True**, False)

The amount of effort required to complete the task differs between tasks. (True, **False**)

Workers A and B are equally likely to be matched with an odd producer or with an even producer. (**True**, False)

The producers can choose whether they prefer to work with odd or even numbers. (True, **False**)

Even producers can only make additional earnings if they buy the number sequences from the worker who translated even numbers. (**True**, False)

If your decision about the allocation of the earnings between workers A and B is selected, the two workers will receive the earnings that you chose for them. (**True**, False)

Your decision

We now want you to choose how to allocate the earnings between worker A and worker B.

Worker A and worker B both worked on the task and generated the number sequences. They were matched with a producer who needed the number sequences that worker A generated. **Worker A sold her number sequences and was paid by the producer**. Hence, **worker A earned 6 USD** for the task and **worker B earned nothing** for the task.

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- I do redistribute: worker A is paid 3 USD and worker B is paid 3 USD.
- I do redistribute: worker A is paid 2 USD and worker B is paid 4 USD.
- I do redistribute: worker A is paid 1 USD and worker B is paid 5 USD.
- I do redistribute: worker A is paid 0 USD and worker B is paid 6 USD.

Finally, we are interested in your thoughts that lead to your payment decision.

Please describe briefly: What was the reasoning that shaped your decision how to split the money between the two workers A and B? _____

What do you think: Before you had the chance to redistribute their earnings, were both workers equally likely to receive the high earnings (i.e., 6 USD)? (Yes, No).

The context of your decision (Robustness Treatment)

As part of this study, we recruited two individuals via an online marketplace to work on a task for which they can earn money. Let us call them **worker A and worker B**.

The role of the workers

Each of the two workers was randomly assigned to one of two tasks that are very similar. Both workers had to generate number sequences. More precisely, they had to **translate sequences of 5 letters into sequences of 5 digits** with the help of a decryption key. The decryption key that each worker received indicates which letter corresponds to which digit. The workers translated the same letter sequences. The only difference between the two tasks was that in one case, the decryption key translates letters into ***odd* digits** and in the other case, the decryption key translates letters into ***even* digits**.

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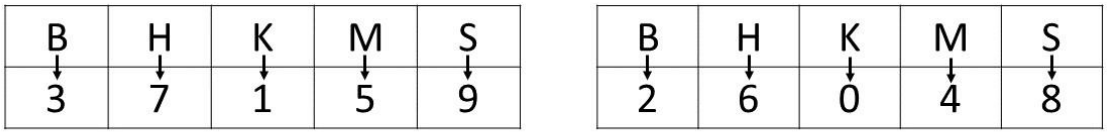

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Both workers had to translate 10 letter sequences correctly. Whereas **worker A** translated 10 letter sequences into **sequences of odd digits, worker B** translated 10 letter sequences into **sequences of even digits**. The amount of **effort** required to complete the task **did not differ between the two tasks**.

The role of the producers

Separately, we recruited other individuals who carried out a separate task for which they could not earn additional money. Let us call these individuals the **producers.**

The producers' task was to **enter and upload number sequences.**

Each producer was either an **"odd"** producer **or** an **"even"** producer. Whether a producer is classified as an odd or an even producer was randomly determined by a lottery.

Odd producers had to **enter and upload odd** number sequences; **even producers** had to **enter and upload even** number sequences.

Payment of producers

Producers were offered a participation compensation of 1 USD for entering and uploading the number sequences. In addition, each producer was randomly matched with a pair of workers A and B.

Payment of workers

Both workers received a participation compensation of 1 USD regardless of what they will be paid for the task.

After completing the task, the workers were told that we recruited additional individuals, which we call the producers. Furthermore, the workers were told that the two of them **together are randomly matched with a producer**. There was an equal chance that the matched producer was an odd producer or an even producer.

One worker translated the same number sequences as the matched producer entered and uploaded. This worker earned 6 USD in addition to the participation compensation of 1 USD. The other worker earned nothing in addition for the task.

That is, if the workers were matched with a producer who entered and uploaded odd numbers (odd producer), only the odd worker earned 6 USD in addition. Vice versa, if the workers were matched with a producer who entered and uploaded even numbers (even producer), only the even worker earned 6 USD in addition.

The workers do not know whether they are matched with an odd or even producer. However, they were told that a third person – the **spectator** – is informed about the translation task, the task of the producer, and the matching with the producer. Furthermore, they were told that the spectator is given the opportunity to redistribute the earnings and thus determines how much they are paid for the task. **You are the third person, the spectator,** who can decide whether to redistribute earnings.

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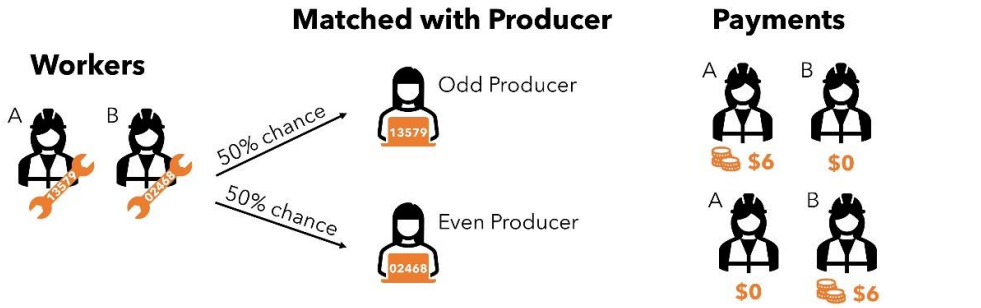

Stage 1

Workers are randomly assigned to a task and translate number sequences.

Worker A translates odd and Worker B translates even number sequences.

Stage 2

The two workers are randomly matched with the same producer.

There is an equal chance that the matched producer is an odd producer or an even producer.

Stage 3

The worker who translates the same number sequences as the producer enters and uploads earns 6 USD for the task.

Your decision

Your role in this study is to **decide on the final earnings** that the two workers receive. This means, you can transfer money from the worker with the high earnings to the worker with the low earnings.

In this study there are other people in your role as spectator who make the same decision as you do. Some of you will be selected to determine the final amount of money that the two workers receive. So, **your decision might be implemented** as well.

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Quiz

Before you make your decision, we ask you to take a **short quiz about the context of your decision**.

You can receive an additional bonus payment of 0.25 USD if you answer all questions correctly.

Before taking the short quiz, do you want to read the instructions again? (Yes, No)

We now ask you to take the short quiz about the context of your decision. Which of the following statements are correct?

Each worker is randomly assigned to one of two tasks. (**True**, False)

The amount of effort required to complete the task differs between tasks. (True, **False**)

Workers A and B are equally likely to be matched with an odd producer or with an even producer. (**True**, False)

The producers can choose whether they prefer to work with odd or even numbers. (True, **False**)

If your decision about the allocation of the earnings between workers A and B is selected, the two workers will receive the earnings that you chose for them. (**True**, False)

Your decision

We now want you to choose how to allocate the earnings between worker A and worker B.

Worker A and worker B both worked on the task and generated the number sequences. **Worker A translated the same number sequences as the producer they were matched with entered and uploaded**. Hence, **worker A earned 6 USD** for the task and **worker B earned nothing** for the task.

Please state which of the following alternatives you choose:

- I do not redistribute: worker A is paid 6 USD and worker B is paid 0 USD.
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- I do redistribute: worker A is paid 2 USD and worker B is paid 4 USD.
- I do redistribute: worker A is paid 1 USD and worker B is paid 5 USD.
- I do redistribute: worker A is paid 0 USD and worker B is paid 6 USD.

Finally, we are interested in your thoughts that lead to your payment decision.

Please describe briefly: What was the reasoning that shaped your decision how to split the money between the two workers A and B? _____

What do you think: Before you had the chance to redistribute their earnings, were both workers equally likely to receive the high earnings (i.e., 6 USD)? (Yes, No).

Demographics

Please tell us about yourself so we can put your other replies in greater context:

- What is your age?
- What is your gender?
    - Male
    - Female
    - Other:___
    - Rather not say
- What is the primary ethnicity or race you identify with?
    - Asian/Asian American
    - Black/African American
    - White/European American
    - Hispanic/Latino
    - Other: __
    - Rather not say
- Were you born in the United States?
    - Yes
    - No
- What was your yearly household income in 2022 in US dollars before taxes and deductions? (Note: the household income is the total amount of money earned by all members of your household)
    - Less than 15,000
    - Between 15,000 and 25,000
    - Between 25,000 and 50,000
    - Between 50,000 and 75,000
    - Between 75,000 and 100,000
    - Between 100,000 and 150,000
    - Between 150,000 and 200,000
    - More than 200,000
- What is the highest educational level that you have attained?
    - 12^{th} grade or less
    - Graduated high school or equivalent
    - Some college, no degree
    - Associate degree
    - Bachelor's degree
    - Post-graduate degree
- What is your current employment status?
    - Full-time employee
    - Part-time employee
    - Self-employed or small business owner
    - Unemployed
    - Student
    - Not in labor force (for example: retired, or full-time parent)
- In political matters, people talk of "the left" and "the right." How would you place your views on this scale, generally speaking?
  (10-point Scale: 1: Left to 10: Right)

- Do you think of yourself as closer to the Republican or Democratic party?
    - Democrat
    - Republican
    - Other: __

Policy Questions

In this part of the survey, we would like to know your opinion on different government policies.

In the following, you will see a list of different government policies. The list includes both policies that might already be in place and policies that are only being discussed but have not been implemented yet. Indicate for each of these policies, how strongly you support or oppose them.

- An increase in the top federal income tax rate for high-income households.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- A tax on the wealth that people inherit from deceased family members (often called an estate tax).
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- A tax on people's net wealth, i.e., on the value of all their assets minus their debt.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- A full employment bill in which the government guarantees a job to everyone who wants to work.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- An increase in the federal minimum wage. (The current level is at 7.25 USD.)
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- An increase of unemployment benefits.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- A universal basic income, where every citizen regularly receives a cash transfer unconditional on his or her employment status.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

In this part of the survey, we are interested in your opinion about the role of the government. Indicate for each of the following statements, how strongly you agree or disagree with them:

- General:
  In general, I trust the federal government to do what is right.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

  It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree
- Trade:
  The government should limit the import of foreign products in order to protect its domestic economy.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- Immigration
  The government should control its borders and impose restrictions on immigration in order to protect domestic jobs.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- Automation
  The government should raise a tax on robots in order to prevent workers to be replaced by machines.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- *Retraining & income support:*
  The government should provide retraining programs for workers in declining industries.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- The government should provide income support for workers in declining industries.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- Unions:
  The government should strengthen the position of unions.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

Finally, please tell us how strongly you agree or disagree with the following statements.

- Income differences between individuals are acceptable if they result from differences in hard work and are not acceptable if they result from differences in luck.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree
- Income differences between individuals are necessary because they incentivize individual effort and thereby increase overall wealth.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree
- In reality, hard work doesn't generally bring success - it's more a matter of luck.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

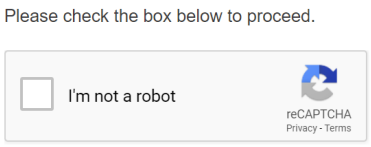
End of Survey

Thank you very much for participating in this study! Please click the button below to be redirected to Prolific and register your submission.

Do you have any comments or suggestions you would like to share with the researchers who designed this study? Is there anything you found unclear or confusing? Are there questions you had wished we asked? Please let us know what you think.

2 Instructions for Workers

Captcha



Consent Form

Thank you for participating in this study.

Please read and follow all instructions carefully. Note that you will remain anonymous throughout the study. We will only use your Prolific ID to assign payment and check that you have not participated in this study before.

Task and duration. The study should last approximately 5 minutes. As part of the study, you will be working on a simple task. You will be given detailed instructions about the task. Please read the instructions carefully.

Payment. If you participate in this study, you will be paid a participation fee of 1 USD. In addition, you may earn additional money, depending on the actions you and others take. We need some time to transfer the additional payments. You will receive these payments within the next 4 weeks via a Prolific bonus transfer. We will try to be as fast as possible.

Confidentiality. We will not ask for any personally identifying information about you, and all your answers are completely anonymous. The data may be published in aggregate form in scientific articles or academic presentations. Your personal identity will not be revealed.

Subjects' rights. Your participation is voluntary. You may withdraw at any time during the study. However, if you withdraw, you will not receive any money. If you have any questions regarding this study, you may contact spectator-study@econ.uzh.ch.

Please indicate, in the box below, that you are at least 18 years old, a resident of the United States of America, have read and understood this consent form, and that you agree to participate in this study.

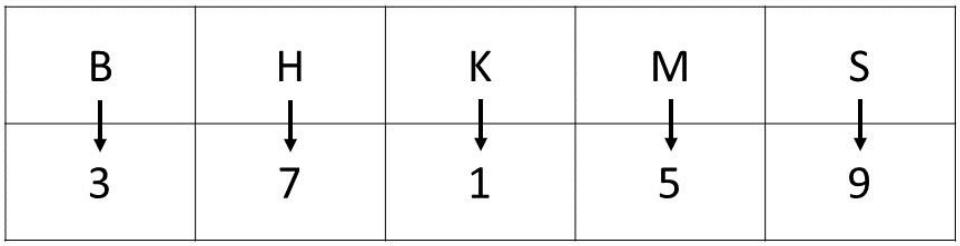
- I agree to participate in this study, am at least 18 years of age and a US resident, and have read this consent form.
- I do not want to participate in this study.

What is your Prolific ID?

Please note that this response should auto-fill with the correct ID. ____

Your task

- You will be given 10 sequences of 5 **letters which you have to translate into** 10 sequences of **digits** with the help of a decryption key.
- The **decryption key tells you which letter corresponds to which even/odd number** and looks as follows:



- **Please enter the number sequence in the field below the letter sequence.**
- For example, if you are given the letter sequence **HMSKB**, you should enter the number sequence **75913**.
- There will be an error message if the translated sequence is incorrect. In this case, you can reenter another sequence. Once you translated the sequence correctly, you can advance to the next sequence on the next page.
- The decryption key will be displayed on every page.
- To complete the task, you have to translate 10 sequences correctly.
- You can withdraw from the task at any point in time, but you will not receive any money in this case.

Make sure that you have read and understood the instructions. The task will start once you go to the next page.

➔ *Task: 10 letter sequences (one sequence per page with decryption key on every page)*

Congratulations, you have finished the task! Please continue to the next page to get information about your earnings.

Your earnings

We will now explain how you will be paid for your work. After you have completed this study, we will match you with another participant who has completed a similar task. The other participant decrypted the same letter sequences but with a decryption key that translates letters into odd/even numbers instead of odd/even numbers, as in your case. The payment to you and the other participant is determined by a two-stage process. Below we explain this process in more detail.

First stage: Market Luck/Mechanism. To determine your earnings for the task, we recruit some additional participants, whom we call the "producers". A producer can earn additional money if he or she acquires number sequences. Producers differ in that some producers can only earn money if they acquire odd numbers, and other producers can only earn money if they acquire even numbers.

You and the other participant will be matched with a randomly selected producer. The producer will not know the identity of you or the other participant but will be informed that there is a worker who translated the sequences that he or she needs.

The producer buys the number sequences either from you or the other participant. If the producer needs odd/even numbers, you earn 6 USD, and the other participant earns 0 USD. If the producer needs even/odd numbers, you earn 0 USD, and the other participant earns 6 USD.

First stage: Robustness. To determine your earnings for the assignment, we recruit some additional participants, whom we call the "producers". Producers differ in that some producers enter and upload odd numbers, and other producers enter and upload even numbers.

You and the other participant will be matched with a randomly selected producer. The producer will not know the identity of you or the other participant.

If the producer enters and uploads odd/even numbers, you earn 6 USD, and the other participant earns 0 USD. If the producer enters and uploads even/odd numbers, you earn 0 USD, and the other participant earns 6 USD.

First stage: Control Luck. For this task, the earnings of you and the other participant are determined by a lottery. Each of you has the same chance to earn 6 USD or 0 USD.

Second stage. For this part of the study, we again recruit other additional participants, whom we will call the "Spectators". A randomly selected Spectator will be given the opportunity to redistribute the earnings between you and the other participant: increasing the payment of the participant with the low earnings by 1 USD decreases the other participant's payment by 1 USD.

The spectator will not know the identity of you or the other participant but will be informed about the nature of the task and the allocation of earnings in the first stage.

If the spectator chooses not to redistribute earnings, each of you will be paid your earnings as determined in the first stage.

If the spectator chooses to redistribute earnings, you will be paid according to the distribution that the Spectator chose.

You will receive your additional payment for the task within 4 weeks and it will be paid separately from your participation fee of 1 USD.

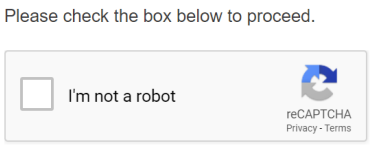
End of Survey

Thank you very much for participating in this study!

Do you have any comments or suggestions you would like to share with the researchers who designed this study? Is there anything you found unclear or confusing? Are there questions you had wished we asked? Please let us know what you think.

3 Instructions for Producers

Captcha



Consent Form

Thank you for participating in this study.

Please read and follow all instructions carefully. Note that you will remain anonymous throughout the study, we will only use your Prolific ID to assign payment and check that you have not participated in this study before.

Task and duration. The study should last approximately 5 minutes. As part of the study, you will be working on a simple task. You will be given detailed instructions about the task. Please read the instructions carefully.

Payment. If you participate in this study, you will be paid a participation fee of 1 USD.

Confidentiality. We will not ask for any personally identifying information about you, and all your answers are completely anonymous. The data may be published in aggregate form in scientific articles or academic presentations. Your personal identity will not be revealed.

Subjects' rights. Your participation is voluntary. You may withdraw at any time during the study. However, if you withdraw, you will not receive any money. If you have any questions regarding this study, you may contact spectator-study@econ.uzh.ch .

Please indicate, in the box below, that you are at least 18 years old, a resident of the United States of America, have read and understood this consent form, and that you agree to participate in this study.

- I agree to participate in this study, am at least 18 years of age and a US resident, and have read this consent form.
- I do not want to participate in this study.

What is your Prolific ID?

Please note that this response should auto-fill with the correct ID. ____

Choice of numbers: Market Luck

In the following, you will work on a task that involves numbers.

You can now choose with which set of numbers you prefer to work. There is no right or wrong answer. Just choose the set of numbers you like more.

- 0, 2, 4, 6, 8
- 1, 3, 5, 7, 9

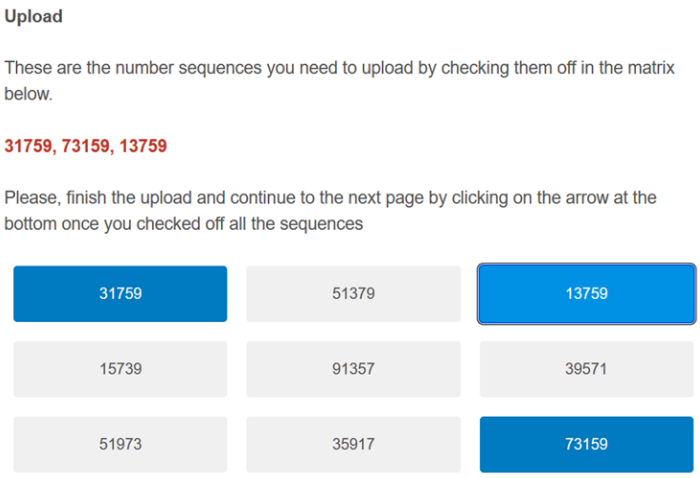
Your task: Market Luck/Mechanism

Your task in this study is to **upload sequences of 5 odd/even digits.** To do that, you will have to **buy these number sequences from another participant.** We will call this participant "the Worker". You can get additional earnings if you upload all the sequences.

We will now give you detailed information about your task. Make sure that you read and understand the instructions.

Buying and uploading the sequences:

- First, you automatically **buy** 10 number **sequences** from the Worker **for a fixed price of 6 USD**.
- You will then have to upload the number sequences.
- For that, you will be shown a list of number sequences in random order.
- To upload your number sequences, **you must find and check off each of your number sequences** from the list of number sequences by clicking on it. **Each of your 10 number sequences occurs once** in the same list.
- Below, you are shown a simplified example to make sure you understand the upload task:



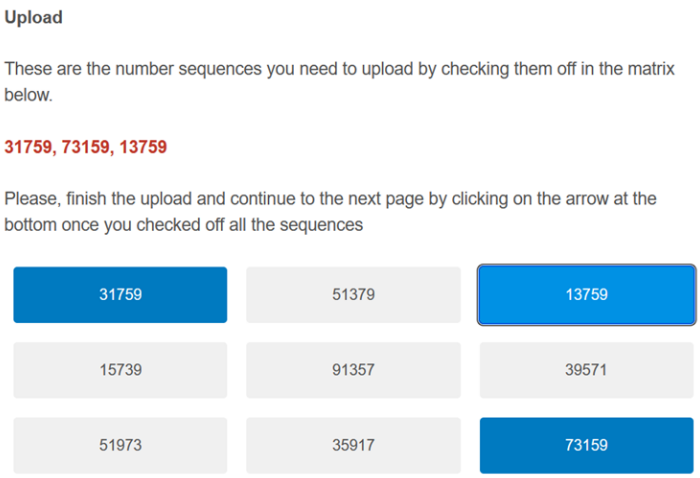
Your task: Robustness

Your task in this study is to **upload sequences of 5 odd/even digits.**

We will now give you detailed information about your task. Make sure that you read and understand the instructions.

Uploading the sequences:

- You are given 10 number sequences consisting of 5 odd/even digits.
- You will have to upload these number sequences.
- For that, you will be shown a list of number sequences in random order.
- To upload your number sequences, **you must find and check off each of your number sequences** from the list of number sequences by clicking on it. **Each of your 10 number sequences occurs once** in the same list.
- Below, you are shown a simplified example to make sure you understand the upload task:



Your earnings: Market Luck/Mechanism

- If you upload all sequences, you can earn a total amount of 8 USD.
- In other words, if you upload all the sequences, **you get additional payments of 2 USD** (8 USD (upload) – 6 USD (fixed price))
- Note that you do not earn any additional money if you check off a wrong sequence.

Your earnings: Robustness

If you upload all your sequences, you earn the participation compensation of 1 USD.

You will continue with the upload of the number sequences on the next page.

Upload

These are the number sequences you need to upload by checking them off in the list of numbers below.

➔ *Display number sequences*

Please, finish the upload and continue to the next page by clicking on the arrow at the bottom once you checked off all the sequences.

➔ *Task: Matrix of number sequences*

You have now completed the task.

Payment: Market Luck/Mechanism

You will receive your additional payment for the assignment within 4 weeks and it will be paid separately from your participation fee of 1 USD.

Thank you very much for participating in this study!

Do you have any comments or suggestions you would like to share with the researchers who designed this study? Is there anything you found unclear or confusing? Are there questions you wished we had asked? Please let us know what you think.

_____

E.2 Survey Experiment

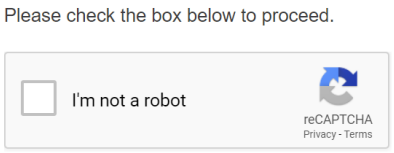
Skill-Biased Inequality and Redistributive Preferences

Supplementary Material: Instructions Survey Experiment

Simona Sartor and Jeffrey Yusof
University of Zurich
January 25, 2024

Consent Form

Thank you for participating in this study!



This is a survey being conducted by researchers at the University of Zurich. All data collected in this survey are for research purposes only.

Task and Duration:
The study should last 10 minutes or less. It is important that you read and follow the instructions carefully and answer the questions honestly.

Compensation:
For your participation, you will be paid a participation compensation of USD 2.

Risk and Benefits:
The risks to you from participating in this study are those associated with basic computer tasks, including boredom, fatigue, or mild stress. The benefit to you is that you contribute to the advancement of scientific knowledge.

Confidentiality:
We will not ask for any personally identifying information about you, and all your answers are completely anonymous. The data may be published in aggregate form in scientific articles or academic presentations. Your personal identity will not be revealed.

Subject's Rights:
Your participation is voluntary. You may withdraw at any time during the study. However, if you withdraw, you will not receive any money.
For additional questions about this research, you may contact spectator-study@econ.uzh.ch.
Please indicate, in the box below, that you are at least 18 years old, a resident of the United States of America, have read and understood this consent form, and that you agree to participate in this study.

- I agree to participate in this study, am at least 18 years of age and a US resident, and have read this consent form.
- I do not want to participate in this study.

What is your Prolific ID?

Please note that this response should auto-fill with the correct ID. ___

Attention Check

This study should take about 10 minutes to complete. It is important that you take the time to read all instructions and that you read questions carefully before you answer them. Previous research has found that some people do not take the time to read everything that is displayed. To show that you read our questions carefully, please choose both 'Monday and 'Tuesday as your answer in the first question and type 'dart' into the 'Other' field of the second question.

Given the above, what are your preferred days to do sports? (Click all that apply)

- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Sunday

Given the above, what is your favorite sport?

- American football
- Baseball
- Ice hockey
- Tennis
- Golf
- Wrestling
- Soccer
- Other:____

Vignettes Intro

In the following pages, **you will read about scenarios in which two individuals who are working end up earning different salaries.** It is explained how the difference in annual earnings between the two individuals occurs.

Your task is to evaluate whether you consider the difference in annual earnings to be fair or unfair. Please read the description of the scenarios carefully.

Scenario Taste Shock

Noah and Liam (Barbara and Sarah) are of the same age but work in different companies. They both work hard, perform well in their jobs, and have similar annual earnings. The companies Noah and Liam work for offer different products to consumers. Because Noah and Liam have different skills, Noah could not work in Liam's company, and Liam could not work in Noah's company.

A **shift in consumers' taste** boosts sales at Noah's company, leaving Liam's company unaffected. As a result, **Noah's annual earnings increase**, while **Liam's annual earnings remain unchanged**. [This change in consumer taste was completely unexpected at the time when Noah and Liam made their career choices.]

Please indicate the extent to which you think it is fair or unfair that Noah now earns more than Liam because of this [unexpected] change in consumer taste.

Scenario Immigration

Mike and Paul (Emma and Olivia) are of the same age but work in different occupations. They both work hard, perform well in their jobs, and have similar annual earnings. Because Mike and Paul have different skills, Mike could not work in Paul's job, and Paul could not work in Mike's job.

Due to an **inflow of immigrants**, there are now many more workers who do the same job as Mike, while there is no change in the number of workers in Paul's job. As a result, **Mike's annual earnings decrease**, while **Paul's annual earnings remain unchanged**. [This immigration wave was completely unexpected at the time when Mike and Paul made their career choices.]

Please indicate the extent to which you think it is fair or unfair that Paul now earns more than Mike because of this [unexpected] increase in immigration.

Scenario Trade

Ethan and Lucas (Mary and Patricia) are of the same age but work in different occupations. They both work hard, perform well in their jobs, and have similar annual earnings. Because Ethan and Lucas have different skills, Ethan could not work in Lucas' job, and Lucas could not work in Ethan's job.

The sector in which Ethan works experiences an **increase in imports from foreign countries**, leading to higher foreign competition in this sector. The sector in which Lucas works remains unaffected by this increase in foreign competition. As a result, **Ethan's annual earnings decrease**, while **Lucas's annual earnings remain unchanged**. [This increase in foreign competition was completely unexpected at the time when Ethan and Lucas made their career choices.]

Please indicate the extent to which you think it is fair or unfair that Lucas now earns more than Ethan because of this [unexpected] increase in foreign competition.

Scenario SBTC: Productivity gain

James and David (Sophia and Charlotte) are of the same age but work in different occupations. They both work hard, perform well in their jobs, and have similar annual earnings. Because James and David have different skills, James could not work in David's job, and David could not work in James's job.

Technological advancements lead to innovations, such as new machinery and computer programs, which make David more productive in his job. James' productivity remains unaffected by these innovations. As a result, **David's annual earnings increase**, while **James' annual earnings remain unchanged**. [These innovations were completely unexpected at the time when James and David made their career choices.]

Please indicate the extent to which you think it is fair or unfair that David now earns more than James because of this [unexpected] technological advancements.

Scenario SBTC: Productivity Loss

Michael and Daniel (Linda and Jennifer) are of the same age but work in different occupations. They both work hard, perform well in their jobs, and have similar annual earnings. Because Michael and Daniel have different skills, Michael could not work in Daniel's job, and Daniel could not work in Michael's job.

Recent innovations in automation have resulted in technology performing some tasks that were part of Michael's job. Daniel's job remains unaffected by these innovations. As a result, **Michael's annual earnings decrease**, while **Daniel's annual earnings remain unchanged**. [This automation was completely

unexpected at the time when Michael and Daniel made their career choices.]

Please indicate the extent to which you think it is fair or unfair that Daniel now earns more than Michael because of this [unexpected] automation.

Scenario Effort

Charles and Thomas (Mia and Emily) are of the same age and work in the same job. They work for different companies but have similar annual earnings.

Charles works harder than Thomas and receives a pay raise**.** As a result, **Charles' annual earnings increase**, while **Thomas' annual earnings remain unchanged.**

Please indicate the extent to which you think it is fair or unfair that Charles earns more than Thomas because he works harder.

Scenario Luck

Samuel and William (Karen and Nancy) are of the same age and work in the same job at different branches of the same company. They both work hard, perform well in their jobs, and have similar annual earnings.

The **company organizes a lottery** to determine which of the two equally successful branches will get a pay raise. Samuel's branch wins the lottery. As a result, **Samuel's annual earnings increase,** while **William's annual earnings remain unchanged.**

Please indicate the extent to which you think it is fair or unfair that Samuel now earns more than William because he won the lottery.
7-point scale: Completely unfair – completely fair

Please briefly explain your reasoning: Why do you believe it is fair or unfair that Samuel now earns more than William because of [shock]? (This is optional) _____

Please indicate how strongly you disagree or agree with this statement: **"This kind of income difference is an effective way to motivate people like Nancy and Karen to work harder, so it is good for the economy."**
7-point scale: Strongly disagree – Strongly agree

Demographics

Please tell us about yourself so we can put your other replies in greater context:

- What is your age?

- What is your gender?
    - Male
    - Female
    - Other:___
    - Rather not say

- What is the primary ethnicity or race you identify with?
    - Asian/Asian American
    - Black/African American
    - White/European American
    - Hispanic/Latino
    - Other: __
    - Rather not say

- In which ZIP code do you live?

- What was your yearly household income in 2023 in US dollars before taxes and deductions? (Note: the household income is the total amount of money earned by all members of your household)
    - Less than 15,000
    - Between 15,000 and 24,999
    - Between 25,000 and 49,999
    - Between 50,000 and 74,999
    - Between 75,000 and 99,999
    - Between 100,000 and 149,999
    - Between 150,000 and 199,999
    - More than 200,000

- What is the highest educational level that you have attained?
    - 12^{th} grade or less
    - Graduated high school or equivalent
    - Some college, no degree
    - Associate degree
    - Bachelor's degree
    - Post-graduate degree

- What is your current employment status?
    - Full-time employee
    - Part-time employee
    - Self-employed or small business owner
    - Unemployed
    - Student
    - Not in labor force (for example: retired, or full-time parent)

- Have you experienced unemployment due to job loss in the past?
    - Yes
    - No
    - Rather not say

- If yes: When was the last time you were unemployed due to job loss?
    - After 2019
    - Between 2015 and 2019
    - Between 2010 and 2014
    - Between 2005 and 2009
    - Between 2000 and 2004
    - Before 2000

- In which industry are you currently working? If you're currently not employed, please select the industry you most recently worked in.
  Use the drop-down menu to specify your industry (Major first, then minor, and lastly the detailed industry.)
  Major (1)
  Minor (2)
  Detailed (3)

- Have you changed the industry you are working in the past?
    - Yes
    - No

- If yes: Please indicate whether your change of industry was voluntary or involuntary (for example, due to job loss).
    - Voluntary
    - Involuntary
    - Rather not say

- If yes: When did your latest industry change occur?
    - After 2019
    - Between 2015 and 2019
    - Between 2010 and 2014
    - Between 2005 and 2009
    - Between 2000 and 2004
    - Before 2000

- Please indicate for each development below whether you think your occupation has been negatively or positively affected by it.
    - Immigration
    - Technological advancements and innovations
    - International trade and imports from foreign countries
    - Changes in consumer taste

    (5-point scale: very negatively – neither negatively nor positively – very positively)

- In political matters, people talk of “the left” and “the right.” How would you place your views on this scale, generally speaking?
  (11-point Scale: 0: Left to 10: Right)

- In politics, as of today, do you consider yourself a Republican, a Democrat, or an Independent?
    - Democrat
    - Republican
    - Independent

- If Independent: If you had to pick between one of the two, which better describes you?
    - Democrats
    - Republicans
    - Rather not say

Policy Questions

In this part of the survey, we would like to know your opinion on different government policies.
In the following, you will see a list of different government policies. The list includes both policies that might already be in place and policies that are only being discussed but have not been implemented yet. Indicate for each of these policies, how strongly you support or oppose them.

- An increase in the top federal income tax rate for high-income households.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- A tax on people's net wealth, this means on the value of all their assets minus their debt.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- A full employment bill in which the government guarantees a job to everyone who wants to work.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- An increase in the federal minimum wage. (The current level is 7.25 USD.)
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- An increase in unemployment benefits.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

- A universal basic income, where every citizen regularly receives a cash transfer unconditional on his or her employment status.
  Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose

In this part of the survey, we are interested in your opinion about the role of the government. Indicate for each of the following statements, how strongly you agree or disagree with them:

- General:
  It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- Trade:
  The government should limit the import of foreign products to protect its domestic economy.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- Immigration
  The government should control its borders and impose restrictions on immigration to protect domestic jobs.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- Automation
  The government should raise a tax on robots to prevent workers from being replaced by machines.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- *Retraining & income support:*
  The government should provide retraining programs for workers in declining industries.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- The government should provide income support for workers in declining industries.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

- Unions:
  The government should strengthen the position of unions.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

Inequality Beliefs

Now, please tell us how strongly you agree or disagree with the following statements.

- Income differences are acceptable when due to hard work but not when arising from luck.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree
- Income differences are essential as they motivate personal effort and increase overall wealth.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree
- In reality, hard work doesn't generally bring success - it's more a matter of luck.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

Beliefs in Markets

Finally, please tell us how strongly you agree or disagree with the following statements.

- In free market systems, people tend to get the outcomes that they deserve.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree
- Free markets are generally efficient in allocating resources and promoting economic growth.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree
- For the economy to work well, it's best if the government intervenes and regulates markets and businesses as little as possible.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree
- Private ownership of businesses and industries is essential for a strong economy.
  Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree

End of Survey

Thank you very much for participating in this study!

Do you have any comments or suggestions you would like to share with the researchers who designed this study? Is there anything you found unclear or confusing? Are there questions you had wished we asked? Please let us know what you think.