Pre-Analysis Plan: Skill-Biased Inequality and Redistributive Preferences - Survey Experiment

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1 Introduction

The rewards for different skills and the resulting skill-biased inequality are often determined by exogenous market mechanisms over which individuals cannot exert control. We refer to this driver of income inequality as market luck. Figurative examples of market luck are profound macroeconomic developments such as globalization, skill-biased technological change, and automation that have caused substantial shifts in the demand and, thereby, the valuation of different skills in the labor market. In this paper, we want to study whether people perceive inequalities arising from market luck as fair.

In our main experiment, income inequality arises between two workers due to demand shocks. We find that individuals are more accepting of higher levels of inequality when attributed to market luck, in contrast to a simple coin flip. Given the somewhat stylized nature of the main experiment, we conduct a complementary survey experiment to elicit fairness views in different market scenarios. Subjects are presented with vignettes depicting situations where market shocks lead to income differences between two workers. Subjects are then asked how fair or unfair they perceive these income differences. The survey experiment allows us to explore how the findings from the online experiment apply to real-world market settings.

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2 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 were described as follows:

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.

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

ness, 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.

3 Primary Outcome Variable

We are interested in the fairness perceptions of the subjects. For each vignette, subjects indicate their fairness evaluation of the income differences between the two workers on a 7-point Likert scale (0: completely unfair, 6: completely fair).

4 Other Variables

- Efficiency concerns: For each vignette, we also ask subjects whether such income differences effectively serve as motivation for workers and are, consequently, beneficial for the economy. The aim is to capture subjects' efficiency-related considerations regarding the income differences between the two workers.
- Open-text explanations (optional): We ask subjects to briefly explain their fairness views for each vignette in an open-text format.
- Policy support and government attitudes: We include questions that elicit subjects' support for different redistributive policies such as, for example, a higher top marginal tax rate, an increase in the minimum wage, the universal basic income, or an increase in unemployment benefits, and their attitudes toward the government and government policies addressing trade, technological progress, and immigration.
- Inequality beliefs: We include questions that elicit subjects' beliefs about inequality and the role of luck versus effort.
- Attitudes towards free markets: We include a set of questions to elicit subjects' market beliefs and their attitudes towards free markets.
- Socio-demographic characteristics: We elicit characteristics of the subjects, such as age, gender, ethnicity, income, education, current employment and employment history, and political orientation.

5 Hypotheses

We are interested in studying whether subjects perceive income inequality in some scenarios as fairer than in others. As our main hypothesis, we want to test whether subjects find income differences in the market shock scenarios fairer than in the brute luck scenario.

We also investigate how fairness ratings differ between the market scenarios and compared to the effort scenario and delve deeper into whether the anticipation of market changes influences subjects' fairness views. We explore whether subjects regard income differences as fairer if workers could have foreseen the shock that caused income inequality, i.e., when it is not explicitly mentioned that the shock was completely unexpected.

6 Data Collection

We use the software Qualtrics to implement the survey experiment. Our data will then be collected through the panel provider Prolific from a representative sample of the US population, cross-stratified on gender, age, and ethnicity. Subjects are randomly shown three vignettes. All subjects receive a fixed participation compensation of USD 2, which amounts to an hourly wage of about USD 12, as the survey should take about 10 minutes.

We plan to collect data from 800 subjects. Each subject is randomly assigned to three vignettes, yielding 200 observations per vignette (in total, there are twelve distinct vignettes: five market scenarios, with and without mention of anticipation, the brute luck scenario, and the effort scenario).[1] Considering insights from a small pilot conducted in July 2022, this sample size enables us to detect an effect size of approximately 0.5 on a fairness scale ranging from 0 to 6 (or 0.3 standard deviations) at the conventional level of significance (5%) and power (80%).

7 Analyses

Primary Analyses

We test whether average fairness ratings are statistically different for two different vignettes. Our main comparison will be between the brute luck and market scenarios. The effort scenario will serve as a secondary benchmark. We further run regressions, where we estimate the effect of the different scenarios simultaneously, i.e., where we include dummy variables for the different scenarios

[1] A subject will see vignettes where all market scenarios are either with or without mention of anticipation.

and use the brute luck scenario as the reference category. The regressions also allow us to control for subjects' background characteristics and individual fixed effects.

Secondary Analyses

We will also investigate whether there are significant differences in fairness perceptions between the market scenarios. Finally, we will examine how anticipation affects fairness views. For each market scenario, we can assess whether there are statistically significant differences when anticipation is mentioned compared to scenarios where it is not. We will also conduct multiple regressions, as mentioned above, comparing the market scenarios without any mention of anticipation and the brute luck scenario.

Exploratory Analyses

We will further conduct some exploratory analyses:

- Efficiency concerns: We also elicit subjects' efficiency concerns for each vignette. We can use this measure to investigate correlations with fairness views and as a control variable in regressions where we estimate the treatment effect of each market scenario separately (using the brute luck scenario as the reference category).
- Support for real-life policies, attitudes toward the government and free markets, and beliefs about inequality: We will use these survey items to investigate how fairness views in the hypothetical scenarios vary with policy support, attitudes toward the government and free markets, and beliefs about inequality.[2].
- Socio-demographic characteristics: We collect data on demographic characteristics such as gender, employment, income, and political orientation. We will use these variables to investigate how fairness perceptions vary along these socio-demographic dimensions. Furthermore, we can examine how employment history and experiences affect fairness views and redistributive preferences.
- Open-text data: We can investigate the data from the open-text answers to get a better understanding of subjects' underlying motivation for their fairness evaluations.

[2]For these analyses, we will look at the individual survey items separately but also create indices for general policy support, attitudes toward the government, inequality beliefs, and free market attitudes.

8 Exclusion Criteria

We will restrict the sample along the following dimensions:

- Attention check: We will implement an attention check before subjects read the instructions of the experiment. Any subject that does not pass the attention check will be excluded from the analysis and not count towards the number of completes.
- Completion time: We exclude subjects from the analyses whose completion time deviates by 2 standard deviations from the mean completion time or falls below a minimum threshold.
- Previous participation: We exclude sbujects who already have participated in the pilot study and our main experiment.