Facing Unequal Barriers to Recover: Exploring Redistribution Preferences in the Face of Lending Discrimination

Alper Sukru Gencer & Jamil Civitarese

Department of Politics, NYU

April 29, 2024

Outline

Summary

Research Question:

- How does discrimination in lending practices affect redistribution preferences?

Summary

Research Question:

- How does discrimination in lending practices affect redistribution preferences?

Significance:

- Ongoing group-based loan discrimination perpetuates the wealth divide

Summary

Research Question:

- How does discrimination in lending practices affect redistribution preferences?

Significance:

- Ongoing group-based loan discrimination perpetuates the wealth divide

Experimental Design:

- Induces social identity

Summary

Research Question:

- How does discrimination in lending practices affect redistribution preferences?

Significance:

- Ongoing group-based loan discrimination perpetuates the wealth divide

Experimental Design:

- Induces social identity
- Mimics real-life economic challenges with real effort tasks and budget requirements

Summary

Research Question:

- How does discrimination in lending practices affect redistribution preferences?

Significance:

- Ongoing group-based loan discrimination perpetuates the wealth divide

Experimental Design:

- Induces social identity
- Mimics real-life economic challenges with real effort tasks and budget requirements
    - Success in tasks keeps the budget same (no loan taken)

Summary

Research Question:

- How does discrimination in lending practices affect redistribution preferences?

Significance:

- Ongoing group-based loan discrimination perpetuates the wealth divide

Experimental Design:

- Induces social identity
- Mimics real-life economic challenges with real effort tasks and budget requirements
  - Success in tasks keeps the budget same (no loan taken)
  - Failure necessitates taking a loan, increasing future financial burdens

Summary

Research Question:

- How does discrimination in lending practices affect redistribution preferences?

Significance:

- Ongoing group-based loan discrimination perpetuates the wealth divide

Experimental Design:

- Induces social identity
- Mimics real-life economic challenges with real effort tasks and budget requirements
  - Success in tasks keeps the budget same (no loan taken)
  - Failure necessitates taking a loan, increasing future financial burdens
  - The amount of the burden following failure varies with group identity

Summary

Research Question:

- How does discrimination in lending practices affect redistribution preferences?

Significance:

- Ongoing group-based loan discrimination perpetuates the wealth divide

Experimental Design:

- Induces social identity
- Mimics real-life economic challenges with real effort tasks and budget requirements
  - Success in tasks keeps the budget same (no loan taken)
  - Failure necessitates taking a loan, increasing future financial burdens
  - The amount of the burden following failure varies with group identity
- Composed of three-people societies where societies are randomly created between rounds

Summary

Research Question:

- How does discrimination in lending practices affect redistribution preferences?

Significance:

- Ongoing group-based loan discrimination perpetuates the wealth divide

Experimental Design:

- Induces social identity
- Mimics real-life economic challenges with real effort tasks and budget requirements
  - Success in tasks keeps the budget same (no loan taken)
  - Failure necessitates taking a loan, increasing future financial burdens
  - The amount of the burden following failure varies with group identity
- Composed of three-people societies where societies are randomly created between rounds
- (Forward-looking) participants vote for future redistribution

Outline

Inequality of Access to Loans

- Lending discrimination occurs when lenders evaluate credit applicants on factors other than the applicant's creditworthiness

Inequality of Access to Loans

- Lending discrimination occurs when lenders evaluate credit applicants on factors other than the applicant's creditworthiness

- Persistent inequality of opportunities despite better regulations
    - Lending practices have gradually become more equitable in the U.S, but more equitable is not equal
    - Even though discriminatory lending practices are prohibited now, Black borrowers and those from other racial and ethnic minority groups remain at a disadvantage

Inequality of Access to Loans

- Lending discrimination occurs when lenders evaluate credit applicants on factors other than the applicant's creditworthiness
- Persistent inequality of opportunities despite better regulations
  - Lending practices have gradually become more equitable in the U.S, but more equitable is not equal
  - Even though discriminatory lending practices are prohibited now, Black borrowers and those from other racial and ethnic minority groups remain at a disadvantage

Inequality of Access to Loans

- Lending discrimination occurs when lenders evaluate credit applicants on factors other than the applicant's creditworthiness

- Persistent inequality of opportunities despite better regulations
  - Lending practices have gradually become more equitable in the U.S, but more equitable is not equal
  - Even though discriminatory lending practices are prohibited now, Black borrowers and those from other racial and ethnic minority groups remain at a disadvantage

- Discrimination can occur in face-to-face decisions or in algorithmic scoring
  - Latinx/African-American borrowers are charged 6-9 basis points higher interest rates for purchase mortgage, costing them $765 million in extra interest per year (Bartlett et al., 2022)

Inequality of Access to Loans

- Lending discrimination occurs when lenders evaluate credit applicants on factors other than the applicant's creditworthiness
- Persistent inequality of opportunities despite better regulations
  - Lending practices have gradually become more equitable in the U.S, but more equitable is not equal
  - Even though discriminatory lending practices are prohibited now, Black borrowers and those from other racial and ethnic minority groups remain at a disadvantage
- Discrimination can occur in face-to-face decisions or in algorithmic scoring
  - Latinx/African-American borrowers are charged 6-9 basis points higher interest rates for purchase mortgage, costing them $765 million in extra interest per year (Bartlett et al., 2022)
  - The mortgage denial rates: Black loan seekers: 18.1%, Hispanic White loan seekers: 12.5%, Asian applicants: 9.7%, and non-Hispanic White applicants: 6.9% (Liu, Jo and Cohen-Harding, 2023)

Inequality of Access to Loans

- Lending discrimination occurs when lenders evaluate credit applicants on factors other than the applicant's creditworthiness
- Persistent inequality of opportunities despite better regulations
  - Lending practices have gradually become more equitable in the U.S, but more equitable is not equal
  - Even though discriminatory lending practices are prohibited now, Black borrowers and those from other racial and ethnic minority groups remain at a disadvantage
- Discrimination can occur in face-to-face decisions or in algorithmic scoring
  - Latinx/African-American borrowers are charged 6-9 basis points higher interest rates for purchase mortgage, costing them $765 million in extra interest per year (Bartlett et al., 2022)
  - The mortgage denial rates: Black loan seekers: 18.1%, Hispanic White loan seekers: 12.5%, Asian applicants: 9.7%, and non-Hispanic White applicants: 6.9% (Liu, Jo and Cohen-Harding, 2023)
  - White neighborhoods received roughly twice as much per person in small-business loans compared with Black neighborhoods (Delis, Fringuellotti and Ongena, 2021)

Inequality of Access to Loans

- **Research Question**:
  - How does discrimination in lending practices affect redistribution preferences?

- **Research Question**:
  - How does discrimination in lending practices affect redistribution preferences?
- **Literature on income inequality and redistribution preferences**
  - Social preferences about inequality and fairness (rather than views on efficiencies) shape preferences for taxation and redistribution (Stantcheva, 2021; Hvidberg, Kreiner and Stantcheva, 2023)

Inequality of Access to Loans

- **Research Question**:
  - How does discrimination in lending practices affect redistribution preferences?

- **Literature on income inequality and redistribution preferences**
  - Social preferences about inequality and fairness (rather than views on efficiencies) shape preferences for taxation and redistribution (Stantcheva, 2021; Hvidberg, Kreiner and Stantcheva, 2023)
  - Perception of merit-based inequality leads to less redistribution demand (Alesina and Angeletos, 2005; Jiménez-Jiménez, Molis and Solano-García, 2020)

- **Research Question**:
  - How does discrimination in lending practices affect redistribution preferences?

- **Literature on income inequality and redistribution preferences**
  - Social preferences about inequality and fairness (rather than views on efficiencies) shape preferences for taxation and redistribution (Stantcheva, 2021; Hvidberg, Kreiner and Stantcheva, 2023)
  - Perception of merit-based inequality leads to less redistribution demand (Alesina and Angeletos, 2005; Jiménez-Jiménez, Molis and Solano-García, 2020)
  - Perception of agency and procedural equality crowd out the demand for redistribution (Akbaș, Ariely and Yuksel, 2019)

Inequality of Access to Loans

- **Research Question**:
  - How does discrimination in lending practices affect redistribution preferences?

- **Literature on income inequality and redistribution preferences**
  - Social preferences about inequality and fairness (rather than views on efficiencies) shape preferences for taxation and redistribution (Stantcheva, 2021; Hvidberg, Kreiner and Stantcheva, 2023)
  - Perception of merit-based inequality leads to less redistribution demand (Alesina and Angeletos, 2005; Jiménez-Jiménez, Molis and Solano-García, 2020)
  - Perception of agency and procedural equality crowd out the demand for redistribution (Akbaș, Ariely and Yuksel, 2019)

- **Lending Discrimination**
  - Lack of agency
  - Effort levels vs. Efficiency
  - Support for redistribution by society formation
  - Poor privileged vs. Rich underprivileged

Outline

Theory - Setup

- A society with three risk-neutral agents
  - Each agent has a group-based social status
  - High status (privileged status, s_h) or low (underprivileged status, s_l)

Theory - Setup

- A society with three risk-neutral agents
  - Each agent has a group-based social status
  - High status (privileged status, s_h) or low (underprivileged status, s_l)

- One-shot game where agents
  - observe their own social class s_i and the social class of the other players s_{-i} (society formation)
  - receive a private signal about their ability θ_i Given these parameters,
  - produce income according to distribution $F(\theta_i, s_i)$ with support $[0, 1]$.

Theory - Setup

- A society with three risk-neutral agents
  - Each agent has a group-based social status
  - High status (privileged status, s_h) or low (underprivileged status, s_l)

- One-shot game where agents
  - observe their own social class s_i and the social class of the other players s_{-i} (society formation)
  - receive a private signal about their ability θ_i Given these parameters,
  - produce income according to distribution $F(\theta_i, s_i)$ with support $[0, 1]$.
  - vote about redistribution, supply effort (labor) in exchange for income, and allocate money to charity.

Theory - Setup

- A society with three risk-neutral agents
  - Each agent has a group-based social status
  - High status (privileged status, s_h) or low (underprivileged status, s_l)

- One-shot game where agents
  - observe their own social class s_i and the social class of the other players s_{-i} (society formation)
  - receive a private signal about their ability θ_i Given these parameters,
  - produce income according to distribution $F(\theta_i, s_i)$ with support $[0, 1]$.
  - vote about redistribution, supply effort (labor) in exchange for income, and allocate money to charity.

- Assumptions:
  - $F(\theta_i, s_h)$ first-order stochastically dominates $F(\theta_i, s_l)$
  - $F(\theta_i, s_i)$ is increasing in θ_i.

Theory - Timing

The game timing is:

1. Agents observe s_i and s_{-i} and receive a private signal a_i about their ability. They update θ_i
2. Agents vote and choose the level of redistribution in society
3. Agents exert effort and receive income
4. Agents decide whether to allocate money to charity or not

Theory - Payoffs

- The payoff of each agent before the charity is given by:

$$\Pi_i^{Before} = (1-\tau)\pi_i + \frac{\tau \sum_{i=1}^{3} \pi_i}{3}$$

  - $\pi_i \sim F(\theta_i, s_i)$ is the income generated by agent i,
  - $\tau \in \{0.05, 0.4\}$ is level of taxation and redistribution of society.

- The payoff of each agent before the charity is given by:

$$\Pi_i^{Before} = (1-\tau)\pi_i + \frac{\tau \sum_{i=1}^{3} \pi_i}{3}$$

  - $\pi_i \sim F(\theta_i, s_i)$ is the income generated by agent i,
  - $\tau \in \{0.05, 0.4\}$ is level of taxation and redistribution of society.

- Furthermore, the financial payoff of each agent after the charity is given by:

$$\Pi_i^{After} = \begin{cases} \Pi_i^{Before} - \kappa_i & \text{if} \quad \min(\Pi_j) \neq \Pi_i \\ \Pi_i^{Before} + \sum \kappa_{-i} & \text{if} \quad \min(\Pi_j) = \Pi_i \end{cases}$$

  - κ_i is a charity transfer from agent i to the poorest agent
  - κ_{-i} is a charity transfer from agents $-i$ to the poorest agent i

Theory - Social Preferences

- Each agent also faces a fairness disutility rising from income disparity among the whole society and within its social group as defined by its status:

$$\psi_i = -\alpha_i(\Pi_i^{After} - \min_{s_j = s_i}(\Pi_j^{After}))^2 - \beta_i(\Pi_i^{After} - \min(\Pi_j)^{After})^2$$

  - α_i is the importance individual i assigns to group-level income disparity
  - β_i is the importance individual i assigns to society-level income disparity

- Each agent also faces a fairness disutility rising from income disparity among the whole society and within its social group as defined by its status:

$$\psi_i = -\alpha_i(\Pi_i^{After} - \min_{s_j=s_i}(\Pi_j^{After}))^2 - \beta_i(\Pi_i^{After} - \min(\Pi_j)^{After})^2$$

  - α_i is the importance individual i assigns to group-level income disparity
  - β_i is the importance individual i assigns to society-level income disparity

- The total utility of agent i is $U_i = \Pi_i^{After} + \psi_i$.

- **Backward Induction**
- In Phase 4, each agent maximizes their utility by setting κ_i.
    - In a society where each individual has positive α and β, the charity will flow from the affluent members of society to the least advantaged, leading to the following theoretical predictions:

Expectations and Hypotheses

- **Backward Induction**
- In Phase 4, each agent maximizes their utility by setting κ_i.
  - In a society where each individual has positive α and β, the charity will flow from the affluent members of society to the least advantaged, leading to the following theoretical predictions:

H1A: *Agents with higher income donate more to charity.*

H1B: *Agents with higher income donate more to charity if the poorest individual is a member of their own group.*

Expectations and Hypotheses

- **Backward Induction**
- In Phase 4, each agent maximizes their utility by setting κ_i.
  - In a society where each individual has positive α and β, the charity will flow from the affluent members of society to the least advantaged, leading to the following theoretical predictions:

  H1A: *Agents with higher income donate more to charity.*

  H1B: *Agents with higher income donate more to charity if the poorest individual is a member of their own group.*

- In Phase 3, the action of agents is non-strategic; they always exert a unit of effort and receive their income

  H2: *Agents exert effort regardless of their types, the society formation, and the chosen redistribution policy.*

Expectations and Hypotheses

- In period 2, agents will vote in favor of higher redistribution. Similar to Meltzer and Richard (1981)
    - Agents will vote for redistribution if their expected utility (U_i) is below the average expected utility of society (μ)

Expectations and Hypotheses

- In period 2, agents will vote in favor of higher redistribution. Similar to Meltzer and Richard (1981)
  - Agents will vote for redistribution if their expected utility (U_i) is below the average expected utility of society (μ)
  - Agents do not observe μ
  - Given their type (s_i) and beliefs about their ability (θ_i), agent i will form beliefs about their future earnings
  - Given others' types (s_{-i}) and beliefs about other members' ability, agent i will form beliefs about others' future earnings

Expectations and Hypotheses

- In period 2, agents will vote in favor of higher redistribution. Similar to Meltzer and Richard (1981)
    - Agents will vote for redistribution if their expected utility (U_i) is below the average expected utility of society (μ)
    - Agents do not observe μ
    - Given their type (s_i) and beliefs about their ability (θ_i), agent i will form beliefs about their future earnings
    - Given others' types (s_{-i}) and beliefs about other members' ability, agent i will form beliefs about others' future earnings
- Agent i will decide against redistribution if, considering its payoff after charity, it has an above-average expected utility

- In period 2, agents will vote in favor of higher redistribution. Similar to Meltzer and Richard (1981)
    - Agents will vote for redistribution if their expected utility (U_i) is below the average expected utility of society (μ)
    - Agents do not observe μ
    - Given their type (s_i) and beliefs about their ability (θ_i), agent i will form beliefs about their future earnings
    - Given others' types (s_{-i}) and beliefs about other members' ability, agent i will form beliefs about others' future earnings
- Agent i will decide against redistribution if, considering its payoff after charity, it has an above-average expected utility

  H3A: *Agents whose expected utility is higher than average will vote for less redistribution.*

Expectations and Hypotheses

- In period 2, agents will vote in favor of higher redistribution. Similar to Meltzer and Richard (1981)
  - Agents will vote for redistribution if their expected utility (U_i) is below the average expected utility of society (μ)
  - Agents do not observe μ
  - Given their type (s_i) and beliefs about their ability (θ_i), agent i will form beliefs about their future earnings
  - Given others' types (s_{-i}) and beliefs about other members' ability, agent i will form beliefs about others' future earnings
- Agent i will decide against redistribution if, considering its payoff after charity, it has an above-average expected utility
  H3A: *Agents whose expected utility is higher than average will vote for less redistribution.*
- Likewise agent i will decide against redistribution if they have high status ($s_i = s_h$) or the society has low status ($s_{-i} = s_l$), holding else constant

Expectations and Hypotheses

- In period 2, agents will vote in favor of higher redistribution. Similar to Meltzer and Richard (1981)
  - Agents will vote for redistribution if their expected utility (U_i) is below the average expected utility of society (μ)
  - Agents do not observe μ
  - Given their type (s_i) and beliefs about their ability (θ_i), agent i will form beliefs about their future earnings
  - Given others' types (s_{-i}) and beliefs about other members' ability, agent i will form beliefs about others' future earnings
- Agent i will decide against redistribution if, considering its payoff after charity, it has an above-average expected utility
  H3A: *Agents whose expected utility is higher than average will vote for less redistribution.*
- Likewise agent i will decide against redistribution if they have high status ($s_i = s_h$) or the society has low status ($s_{-i} = s_l$), holding else constant
  H3B: *Agents with high-status type vote for the less redistribution.*
  H3C: *When others have low-status types, agents vote for the less redistribution.*

Outline

Overview of Experimental Design

- **Recruitment.** We plan to conduct this experiment during the Summer of 2024 - Fall of 2024 with 120 participants

Overview of Experimental Design

- **Recruitment.** We plan to conduct this experiment during the Summer of 2024 - Fall of 2024 with 120 participants
- **Incentives.** Participants will receive a participation fee, incentives from randomly chosen three rounds (out of ten rounds), plus elicitation incentives from those rounds

Overview of Experimental Design

- **Recruitment.** We plan to conduct this experiment during the Summer of 2024 - Fall of 2024 with 120 participants
- **Incentives.** Participants will receive a participation fee, incentives from randomly chosen three rounds (out of ten rounds), plus elicitation incentives from those rounds
- **Sessions Structure.** Each session is composed of 10 rounds
    - Rounds 1-3 without lending discrimination
    - Rounds 4-10 with lending discrimination

Overview of Experimental Design

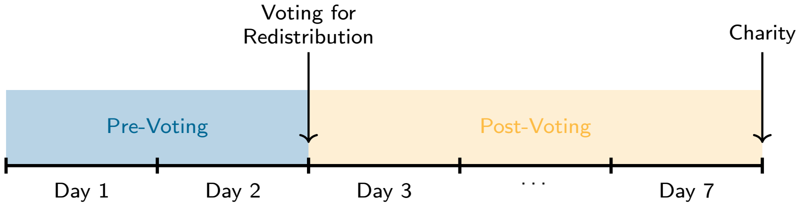
- **Recruitment.** We plan to conduct this experiment during the Summer of 2024 - Fall of 2024 with 120 participants

- **Incentives.** Participants will receive a participation fee, incentives from randomly chosen three rounds (out of ten rounds), plus elicitation incentives from those rounds

- **Sessions Structure.** Each session is composed of 10 rounds
  - Rounds 1-3 without lending discrimination
  - Rounds 4-10 with lending discrimination

- **Round Structure.** A round is composed of 7 experimental working days (we will call it "day")
  - After the first two days with real effort tasks, players will hold a forward-looking vote on redistribution schemes
  - Players will complete real-effort tasks for five more days under the new redistribution scheme.
  - Players will decide whether they would like to give charity to the poorest player anonymously

Overview of Experimental Design



An Example Round

Social Identity Inducement

- Following Landa and Duell (2015), we will show five pairs of paintings by two artists, Paul Klee and Wassily Kandinsky

Social Identity Inducement

- Following Landa and Duell (2015), we will show five pairs of paintings by two artists, Paul Klee and Wassily Kandinsky
- Participants will be asked to choose which painting in each pair they prefer

Social Identity Inducement

- Following Landa and Duell (2015), we will show five pairs of paintings by two artists, Paul Klee and Wassily Kandinsky
- Participants will be asked to choose which painting in each pair they prefer
- Based on their responses, participants will then be classified as members of the "KLEEs" (or "a KLEE" as a shorthand) or members of the "KANDINSKYs" (or "a KANDINSKY" as a shorthand)

Social Identity Inducement

- Following Landa and Duell (2015), we will show five pairs of paintings by two artists, Paul Klee and Wassily Kandinsky
- Participants will be asked to choose which painting in each pair they prefer
- Based on their responses, participants will then be classified as members of the "KLEEs" (or "a KLEE" as a shorthand) or members of the "KANDINSKYs" (or "a KANDINSKY" as a shorthand)
- Their classification as KLEE or KANDINSKY is based on their preferences and how close their preferences are to the preferences of other participants who received the same classification as themselves

Social Identity Inducement

- Following Landa and Duell (2015), we will show five pairs of paintings by two artists, Paul Klee and Wassily Kandinsky
- Participants will be asked to choose which painting in each pair they prefer
- Based on their responses, participants will then be classified as members of the "KLEEs" (or "a KLEE" as a shorthand) or members of the "KANDINSKYs" (or "a KANDINSKY" as a shorthand)
- Their classification as KLEE or KANDINSKY is based on their preferences and how close their preferences are to the preferences of other participants who received the same classification as themselves
- Everyone's identity as a KLEE or a KANDINSKY will stay fixed for the rest of the experiment

Social Identity Inducement

- Following Landa and Duell (2015), we will show five pairs of paintings by two artists, Paul Klee and Wassily Kandinsky
- Participants will be asked to choose which painting in each pair they prefer
- Based on their responses, participants will then be classified as members of the "KLEEs" (or "a KLEE" as a shorthand) or members of the "KANDINSKYs" (or "a KANDINSKY" as a shorthand)
- Their classification as KLEE or KANDINSKY is based on their preferences and how close their preferences are to the preferences of other participants who received the same classification as themselves
- Everyone's identity as a KLEE or a KANDINSKY will stay fixed for the rest of the experiment
- Lastly both KLEEs and KANDINSKYs will have a group-level quiz with group chat to strengthen the social identity

Formation of Societies

- Participants will be randomly assigned into three-person societies each rounds in a given session

Formation of Societies

- Participants will be randomly assigned into three-person societies each rounds in a given session

- Rounds 1-3 no lending discrimination, Rounds 4-10 with lending discrimination

Formation of Societies

- Participants will be randomly assigned into three-person societies each rounds in a given session
- Rounds 1-3 no lending discrimination, Rounds 4-10 with lending discrimination
- At the beginning of the fourth round, we will randomly assign KLEE or KANDINSKY members to either 1) *privileged* or 2) *underprivileged* status

Formation of Societies

- Participants will be randomly assigned into three-person societies each rounds in a given session
- Rounds 1-3 no lending discrimination, Rounds 4-10 with lending discrimination
- At the beginning of the fourth round, we will randomly assign KLEE or KANDINSKY members to either 1) *privileged* or 2) *underprivileged* status
- Underprivileged agents will face a costlier loan if they fail to meet the daily required budget at the end of the day

$$\$0 < k_i^P < k_i^U < \$1$$

  - the cost of loans (k_i) for participant i
  - the cost of loans for privileged members (k_i^P)
  - the cost of loans for underprivileged participants (k_i^U):

Experimental Working Days

- During each day, players will be given 45 seconds to complete as many real-effort tasks as they want
  - Earnings depending on the accuracy of the tasks
  - Difficulty of each task will be block-randomized

Experimental Working Days

- During each day, players will be given 45 seconds to complete as many real-effort tasks as they want
    - Earnings depending on the accuracy of the tasks
    - Difficulty of each task will be block-randomized

- Agents must also meet some budget requirements (B_t) plus some random shock (e_t) to succeed that day
    - After E tasks, if daily earning is equal or larger than the budget requirement ($\sum_{e=1}^{E} earnings_{i,t,e} > B_{i,t} + e_t$) $\rightarrow$ SUCCESS

Experimental Working Days

- During each day, players will be given 45 seconds to complete as many real-effort tasks as they want
  - Earnings depending on the accuracy of the tasks
  - Difficulty of each task will be block-randomized

- Agents must also meet some budget requirements (B_t) plus some random shock (e_t) to succeed that day
  - After E tasks, if daily earning is equal or larger than the budget requirement ($\sum_{e=1}^{E} earnings_{i,t,e} > B_{i,t} + e_t$) $\rightarrow$ SUCCESS $\rightarrow$ They will win the surplus earnings above their budget

$$\pi_{i,t} = (\sum_{e=1}^{E} earnings_{i,t,e} - B_{i,t} - e_t) \Bigg| \mathbb{I}[Success_{i,t} = 1]$$

Experimental Working Days

- During each day, players will be given 45 seconds to complete as many real-effort tasks as they want
  - Earnings depending on the accuracy of the tasks
  - Difficulty of each task will be block-randomized

- Agents must also meet some budget requirements (B_t) plus some random shock (e_t) to succeed that day
  - After E tasks, if daily earning is equal or larger than the budget requirement ($\sum_{e=1}^{E} earnings_{i,t,e} > B_{i,t} + e_t$) $\rightarrow$ SUCCESS $\rightarrow$ They will win the surplus earnings above their budget

$$\pi_{i,t} = (\sum_{e=1}^{E} earnings_{i,t,e} - B_{i,t} - e_t) \Bigg| \mathbb{I}[Success_{i,t} = 1]$$

  where $e_t \in [-1, 1]$

  - If failure to meet the required budget $\rightarrow$ FAILURE

Experimental Working Days

- During each day, players will be given 45 seconds to complete as many real-effort tasks as they want
  - Earnings depending on the accuracy of the tasks
  - Difficulty of each task will be block-randomized

- Agents must also meet some budget requirements (B_t) plus some random shock (e_t) to succeed that day
  - After E tasks, if daily earning is equal or larger than the budget requirement ($\sum_{e=1}^{E} earnings_{i,t,e} > B_{i,t} + e_t$) $\rightarrow$ SUCCESS $\rightarrow$ They will win the surplus earnings above their budget

$$\pi_{i,t} = (\sum_{e=1}^{E} earnings_{i,t,e} - B_{i,t} - e_t) \quad \Big| \quad \mathbb{I}[Success_{i,t} = 1]$$

    where $e_t \in [-1, 1]$

  - If failure to meet the required budget $\rightarrow$ FAILURE $\rightarrow$ 0 earnings for that round and must take a loan to meet their required budget:

$$\pi_{i,t} = 0 \quad \Big| \quad \mathbb{I}[Failure_{i,t} = 1]$$

Experimental Working Days

- But loans are costly!

Experimental Working Days

- But loans are costly!
- If SUCCESS:
  - No loan $\rightarrow$ Budget remains the same

$$B_{i,t+1} = B_{i,t} \;\Big|\; \mathbb{I}[Success_{i,t} = 1]$$

Experimental Working Days

- But loans are costly!
- If SUCCESS:
  - No loan $\rightarrow$ Budget remains the same

$$B_{i,t+1} = B_{i,t} \;\Big|\; \mathbb{I}[Success_{i,t} = 1]$$

- If FAILURE:
  - The loan increases the required budget requirement for the next round by k_i. More specifically,

$$B_{i,t+1} = B_{i,t} + k_i \;\Big|\; \mathbb{I}[Failure_{i,t} = 1]$$

Experimental Working Days

- But loans are costly!
- If SUCCESS:
  - No loan $\rightarrow$ Budget remains the same

$$B_{i,t+1} = B_{i,t} \;\Big|\; \mathbb{I}[Success_{i,t} = 1]$$

- If FAILURE:
  - The loan increases the required budget requirement for the next round by k_i. More specifically,

$$B_{i,t+1} = B_{i,t} + k_i \;\Big|\; \mathbb{I}[Failure_{i,t} = 1]$$

Voting on Redistribution Schemes

- Players will hold forward-looking voting for redistribution after the first two days

Voting on Redistribution Schemes

- Players will hold forward-looking voting for redistribution after the first two days
- Two redistribution schemes: $\tau \in \{5\%, 40\%\}$ without a dead weight loss

Voting on Redistribution Schemes

- Players will hold forward-looking voting for redistribution after the first two days
- Two redistribution schemes: $\tau \in \{5\%, 40\%\}$ without a dead weight loss
- Participants will be asked their incentivized guesses about average income and other players' strategies

Voting on Redistribution Schemes

- Players will hold forward-looking voting for redistribution after the first two days
- Two redistribution schemes: $\tau \in \{5\%, 40\%\}$ without a dead weight loss
- Participants will be asked their incentivized guesses about average income and other players' strategies
- A simple majority will choose the tax scheme, and the chosen scheme will be public information

Charity Component

- At the end of the seventh day, players will be told their net earnings before charity (π_i^{Before}).

$$\pi_i^{Before} = \underbrace{\left(\sum_{t=1}^{2} \pi_{i,t}\right)}_{Pre-Voting \;\; Earnings} \underbrace{+ (1-\tau)\left(\sum_{t=3}^{7} \pi_{i,t}\right) + \left((\tau/3)\sum_{i=1}^{3}\sum_{t=3}^{7} \pi_{i,t}\right)}_{Post-Voting \;\; Earnings}$$

Charity Component

- At the end of the seventh day, players will be told their net earnings before charity (π_i^{Before}).

$$\pi_i^{Before} = \underbrace{\left(\sum_{t=1}^{2} \pi_{i,t}\right)}_{Pre-Voting\ \ Earnings} \underbrace{+ (1-\tau)\left(\sum_{t=3}^{7} \pi_{i,t}\right) + \left((\tau/3)\sum_{i=1}^{3}\sum_{t=3}^{7} \pi_{i,t}\right)}_{Post-Voting\ \ Earnings}$$

- Players will be also given the option to allocate their earnings to the poorest participant as they wish:

Charity Component

- At the end of the seventh day, players will be told their net earnings before charity (π_i^{Before}).

$$\pi_i^{Before} = \underbrace{\left(\sum_{t=1}^{2} \pi_{i,t}\right)}_{Pre-Voting \ \ Earnings} \underbrace{+ (1-\tau)\left(\sum_{t=3}^{7} \pi_{i,t}\right) + \left((\tau/3)\sum_{i=1}^{3}\sum_{t=3}^{7} \pi_{i,t}\right)}_{Post-Voting \ \ Earnings}$$

- Players will be also given the option to allocate their earnings to the poorest participant as they wish:

- Furthermore, the financial payoff of each agent after the charity is given by:

$$\underbrace{\pi_i^{After}}_{After \ \ Charity \ \ Earnings} = \begin{cases} \pi_i^{Before} - \kappa_i & \text{if} \quad \min(\pi_j) \neq \pi_i \\ \pi_i^{Before} + \sum \kappa_{-i} & \text{if} \quad \min(\pi_j) = \pi_i \end{cases}$$

Outline

Estimation Strategy

- Hypotheses (H1A and H1B), we will use the ordinary least squares with the following model:

$$\sum_{j}^{j \neq i} \kappa_{i,j} = \beta_0 + \beta_1 \cdot \sum_{j}^{3} (\Pi_i - \Pi_j)^2 + \alpha_1 \cdot \sum_{j}^{s_j = s_i} (\Pi_i - \Pi_j)^2 + e_i$$

where the nulls are $H^0_{2A} : \beta_1 \leq 0$ and $H^0_{2B} : \alpha_1 \leq 0$ and alternative hypotheses are $H^1_{2A} : \beta_1 > 0$ and $H^1_{2B} : \alpha > 0$.

Estimation Strategy

- Hypotheses (H3A) pose a methodological challenge since elicited beliefs about expected utility above the mean at the end (γ_i) will depend on individual ability and effort, where the former is unobserved

Estimation Strategy

- Hypotheses (H3A) pose a methodological challenge since elicited beliefs about expected utility above the mean at the end (γ_i) will depend on individual ability and effort, where the former is unobserved
  - A two-stage least squares (2SLS) regression analysis with block randomized task difficulty to overcome this challenge

$$\gamma_i = b_0 + b_1 \sum_{r=1}^{R} \mathtt{I}[task_r = Difficult] + b_2 \sum_{t=1}^{2} \pi_{i,t} + b_3 \Big(\mathtt{I}[s_i = s_H] \Big) + \nu_i$$

  - Exploiting the random variation in difficulty, we will instrument for ability. After fitting $\hat{\gamma}_i$ for individual i, we will conduct the following second stages:

$$\mathtt{I}[\tau_i = 0.4] = c_0 + c_1 \hat{\gamma}_i + c_2 \sum_{t=1}^{2} \pi_{i,t} + c_3 \Big(\mathtt{I}[s_i = s_H] \Big) + \epsilon_i$$

where the null is $H_{3A}^0 : c_1 \geq 0$ and alternative hypothesis are $H_{3A}^1 : c_1 < 0$

Thank you for your attention!

Alper Sukru Gencer

asg664@nyu.edu

References

Akbaş, Merve, Dan Ariely and Sevgi Yuksel. 2019. "When is inequality fair? An experiment on the effect of procedural justice and agency." *Journal of Economic Behavior & Organization* 161:114–127.

Alesina, Alberto and George-Marios Angeletos. 2005. "Fairness and redistribution." *American economic review* 95(4):960–980.

Bartlett, Robert, Adair Morse, Richard Stanton and Nancy Wallace. 2022. "Consumer-lending discrimination in the FinTech era." *Journal of Financial Economics* 143(1):30–56.

Delis, Manthos D, Fulvia Fringuellotti and Steven Ongena. 2021. "Credit and income inequality." *FRB of New York Staff Report* (929).

Hvidberg, Kristoffer B, Claus T Kreiner and Stefanie Stantcheva. 2023. "Social positions and fairness views on inequality." *Review of Economic Studies* 90(6):3083–3118.

Jiménez-Jiménez, Natalia, Elena Molis and Ángel Solano-García. 2020. "The effect of initial inequality on meritocracy: A voting experiment on tax redistribution." *Journal of Economic Behavior & Organization* 175:380–394.

Landa, Dimitri and Dominik Duell. 2015. "Social identity and electoral accountability." *American Journal of Political Science* 59(3):671–689.

Liu, Feng, Young Jo and Noah Cohen-Harding. 2023. "Data Point: 2022 Mortgage Market Activity and Trends." *Consumer Financial Protection Bureau Office of Research Reports Series* (23-06).

Meltzer, Allan H and Scott F Richard. 1981. "A rational theory of the size of government." *Journal of political Economy* 89(5):914–927.

Stantcheva, Stefanie. 2021. "Understanding tax policy: How do people reason?" *The Quarterly Journal of Economics* 136(4):2309–2369.