Reality vs. Ideology: An Alternative Explanation of Individual Preferences for Redistribution

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OUTLINE

• Introduction
• The EITM Framework
• Applying the EITM Framework
• Data and Measurement
• Empirical Results
• Conclusions
The **PUZZLE** of inequality and redistribution

  Individual preferences for redistribution depend on individual income positions:
  2 implications (micro & macro)

- Mixed results from empirical tests (Persson and Tabellini 2000)

- My answer (micro level)
  - Utilizing **EITM framework**
  - Not only individual’s own income level but also her **evaluation of justice** with respect to
    the income distribution of the **whole society** matter in redistributive preferences
  - Justice evaluation is about the **difference** between what an individual **actually observes**
    regarding the income inequality of the society and the just level that she **perceives**
INTRODUCTION – LIT REVIEW

Static trend
Purely materialist and selfish individual

POUM hypothesis
Meltzer and Richard (1981)
Benabou and Ok (2001)

Dynamic trend
Self-interest as driving force

Economic efficiency
Indirect inequality
Galor and Zeira (1993)

Ideological Preferences
Direct inequality
Alesina and Giuliano (2008)

This study introduces Jasso’s model of justice to explain

Social-interest

Perceived inequality
Cruces et al. (2013) and Niehues (2014)
INTRODUCTION – LIT REVIEW

• Most recent studies: it is not actual income inequality, but rather how it is perceived that matters
  
  *Actual*: officially-reported national income inequality  
  *Perceived*: individual view of the income distribution

• Three problems of this alternative viewpoint:
  
  1. How should “actual” and “perceived” be defined at the micro level?  
  2. Theory underlying: how does the effect of perceived part come about?  
  3. How does the difference between actual and perceived inequality matter?
• Why does individual-specific perceived income inequality matter in understanding individual preferences for redistribution?

• How does the difference between what an individual actually observes and perceives about income inequality affect her preferences for redistribution?
Three-Step EITM Framework

(Granato et al., 2010)

- **Step 1**: Identify a theoretical concept of human behavior of interest and relate it to a statistical concept.
- **Step 2**: Develop behavioral (formal) and statistical analogues.
- **Step 3**: Unify the theoretical and statistical analogues in testable theory.
Step 1: relating decision making to discrete choice

- **Theoretical Concept**
  
  *Decision making*
  
  => Maximize the utility of supporting redistribution

- **Applied Statistical Concept**
  
  *Discrete choice*
  
  => Preferences on redistribution
Step 2: develop behavioral (formal) and applied statistical analogues

- Based on MR (1981) model: let each individual $i$ is purely self-interested under a laissez-faire condition

\[ U_i = \left( \frac{C_i}{Y_i} \right)^\alpha \]  \hspace{1cm} (1)

where $C$ represents the consumption and $Y$ represents the income, and $\alpha$ is a preference parameter ($\alpha \in (0, 1]$). Also, $C_i = (1 - t)Y_i + T_i$, where $T$ is government transfers and $T_i = r(Y^* - Y_i)$. $C_i = Y_i = (1 - t)Y_i + r(Y^* - Y_i)$ Thus, the average income $\bar{Y}_i = \left( \frac{r}{t+r} \right) Y^*$. We can directly see that $\bar{Y}_i$ is actually constant in the model since it is a function of $Y^*$. In this case, $U_i = \left( \frac{Y_i}{\bar{Y}_i} \right)^\alpha$, after log transformation:

\[ u_i = \alpha y_i - \alpha \bar{y}_i \]  \hspace{1cm} (2)

where $u_i \equiv \ln U_i$, $y_i \equiv \ln Y_i$, and $\bar{y}_i \equiv \ln \bar{Y}_i$. Since $\bar{Y}_i$ is constant across $i$, thus

\[ u_i = \theta_0 + \theta y_i \]  \hspace{1cm} (3)
Step 2: develop behavioral (formal) and applied statistical analogues

- What if i cares about social-interest, whether the society is just?
- Incorporate Jasso’s (1999) justice evaluation function

\[ J = \ln \left( \frac{A}{C} \right) \]  \hspace{1cm} (4)

where A represents personal *actual* earnings and C represents personal *perceived* just earnings.

- \( A > C \Rightarrow J > 0 \), over-rewarded;
  \( A = C \Rightarrow J = 0 \), perfectly just;
  \( A < C \Rightarrow J < 0 \), under-rewarded.
**Step 2: develop behavioral (formal) and applied statistical analogues**

- **Justice index of the society**

  \[ JI = E(J) = E \left[ \ln \left( \frac{A}{C} \right) \right] = \ln \left[ \frac{G(A)}{G(C)} \right] \tag{5} \]

  where \( E(X) = \frac{\sum_{n=1}^{N} x_n}{N} \) and \( G(.) \) is defined as:
  \[
  G(X) = \left( \prod_{n=1}^{N} x_n \right)^{1/N}
  \]

- \( JI > 0 \), over-burdened society;
- \( JI = 0 \), perfectly just society;
- \( JI < 0 \), under-benefited society.
**Step 2: develop behavioral (formal) and applied statistical analogues**

- Income inequality in justice index
  Atkinson’s (1975) measure
  
  \[ I(X) = 1 - \frac{G(X)}{E(X)} \]  
  \[ (6) \]

- \( I(X) = 0 \), no inequality;
  \( I(X) \) increases as the inequality increases.

\[ G(X) = E(X)[1 - I(X)] \]  
\[ (7) \]

\[ JI = \ln \left( \frac{G(A)}{G(C)} \right) = \ln \left( \frac{E(A)[1 - I(A)]}{E(C)[1 - I(C)]} \right) \]  
\[ (8) \]
Step 2: develop behavioral (formal) and applied statistical analogues

Reality vs. ideology in justice index

\[ JI = \left[ \ln(E(A)) - \ln(E(C)) \right] + \left[ \ln(1 - I(A)) - \ln(1 - I(C)) \right] \] (9)

\[ JI = JI_{\text{mean}} + JI_{\text{inequality}} = (\text{Observed} - \text{Perceived})_{\text{mean}} + (\text{Observed} - \text{Perceived})_{\text{inequality}} \]

- Observed inequality: income inequality of the society based on actual income distribution an individual observes.
- Perceived inequality: income inequality of the society based on just income distribution an individual perceives.

*Note: \( \ln(1 - I(A)) \) increases, inequality decreases; \( \ln(1 - I(A)) - \ln(1 - I(C)) > 0 \), observed inequality is lower than perceived inequality.
Step 2: develop behavioral (formal) and applied statistical analogues

- Discrete choice and logistic regression
  (Incorporate self- and social-interest)

\[
R_i = \left( \theta_0 + \theta y_i \right) + \left\{ \beta \ln(E(A)_i) - \ln(E(C)_i) \right\} + \gamma \left[ \ln(1 - I(A)_i) - \ln(1 - I(C)_i) \right]
\]

where \( P_i \) = preferences for redistribution – probability of supporting redistribution;

\[ \ln(E(A)) - \ln(E(C)) = \text{the difference between observed and perceived mean income}; \]

\[ \ln(1 - I(A)) - \ln(1 - I(C)) = \text{the difference between observed and perceived income inequality}. \]
Step 3: unify and evaluate the analogues

\[ P_i = \alpha_0 + \theta \text{Income}_i + \beta \text{DiffMean}_i + \gamma \text{DiffInequality}_i + \epsilon_i \]  

- \( \theta \) is the effect of individual income on individual preferences for redistribution;
- \( \beta \) is the effect of the difference between observed and perceived mean income of the society on individual preferences for redistribution;
- \( \gamma \) is the effect of the difference between observed and perceived income inequality of the society on individual preferences for redistribution.
Step 3: unify and evaluate the analogues

• Hypothesis (based on equation (11))

\[ \gamma < 0, \quad P_i \text{ decreases as } \ln(1 - I(A)) - \ln(1 - I(C)) \text{ increases.} \]

Motivated by social-interest, individual evaluates the whole society as either over-burdened or under-benefited. This is based on the difference between the income inequality that she actually observes and the just level that she perceives and is less likely to support redistribution if the real society is more just than perceived.
DATA AND MEASUREMENT

- Cross-sectional data set
- ISSP (International Social Survey Programme) 2009
- Asks each respondent about actual vs. just pay for different occupations:
  “How much does a (particular occupation) in general practice actually earn and should earn?”
## DATA AND MEASUREMENT

<table>
<thead>
<tr>
<th>DV: Individual Preferences</th>
<th>Description</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Redist_Poor</strong></td>
<td>support for redistribution regarding the benefits to the poor (1, support; 0, otherwise)</td>
<td>0.799</td>
<td>0.401</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Redist_Tax</strong></td>
<td>regarding the tax on the rich (1, support; 0, otherwise)</td>
<td>0.680</td>
<td>0.467</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

### IV: Self Interest

| Income                      | log income                                                                 | 28.511 | 34.802 | 0    | 160  |

### Key IV: Social Interest

| **Observed_{inequality}**   | Calculated based on $I(A) = 1 - \left[ \frac{G(A)}{E(A)} \right]$ and $\ln(1 - I(A))$ | -1.154 | 0.946  | -5.397 | -0.015 |
| **Perceived_{inequality}**  | Calculated based on $I(C) = 1 - \left[ \frac{G(C)}{E(C)} \right]$ and $\ln(1 - I(C))$ | -0.537 | 0.573  | -3.781 | 0     |
| **Diff_{inequality}**       | $\text{Observed}_{inequality} - \text{Perceived}_{inequality}$                  | -0.617 | 0.855  | -4.537 | 2.339 |
EMPIRICAL RESULTS – U.S.

Table 1: Individual Support for the Benefits to the Poor

<table>
<thead>
<tr>
<th></th>
<th>(1) Difference</th>
<th>(2) Observed</th>
<th>(3) Perceived</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redist_Poor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>- 0.25***</td>
<td>- 0.24***</td>
<td>- 0.24***</td>
</tr>
<tr>
<td></td>
<td>(0.056)</td>
<td>(0.056)</td>
<td>(0.056)</td>
</tr>
<tr>
<td>Diff_mean</td>
<td>- 0.35**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.162)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diff_inequality</td>
<td>- 0.62***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.239)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observed_mean</td>
<td></td>
<td>- 0.15</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.129)</td>
<td></td>
</tr>
<tr>
<td>Observed_inequality</td>
<td></td>
<td>- 0.21</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.210)</td>
<td></td>
</tr>
<tr>
<td>Perceived_mean</td>
<td></td>
<td></td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.094)</td>
</tr>
<tr>
<td>Perceived_inequality</td>
<td></td>
<td></td>
<td>0.36*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.198)</td>
</tr>
<tr>
<td>Constant</td>
<td>1.94***</td>
<td>3.58**</td>
<td>1.89</td>
</tr>
<tr>
<td></td>
<td>(0.192)</td>
<td>(1.438)</td>
<td>(1.035)</td>
</tr>
<tr>
<td>Observations</td>
<td>701</td>
<td>701</td>
<td>701</td>
</tr>
</tbody>
</table>

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

- Only the difference between the observed and the perceived inequality is statistically significant.

- The likelihood for an individual to support more benefits for the poor decreases by about 60% if the observed income inequality becomes most just from least just compared to her perceived level (i.e., from extremely under-benefited to over-benefited society).
EMPIRICAL RESULTS – U.S.

Both the difference and the perceived inequality are statistically significant. But the directions are opposite.

An individual is 40% less likely to support more progressive taxation when her observed income inequality moves from the greatest level to the lowest degree compared to her perceived level.

<table>
<thead>
<tr>
<th>Table 2: Individual Support for the Tax on the Rich</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Difference (2) Observed (3) Perceived</td>
</tr>
<tr>
<td>Redist_Tax  Redist_Tax  Redist_Tax</td>
</tr>
<tr>
<td>Income     - 0.08     - 0.08*                        - 0.08*</td>
</tr>
<tr>
<td>(0.046)   (0.046)                           (0.046)</td>
</tr>
<tr>
<td>Diff_mean  - 0.08     - 0.08                          - 0.08</td>
</tr>
<tr>
<td>(0.161)   (0.161)                         (0.161)</td>
</tr>
<tr>
<td>Diff_inequality - 0.81***                           - 0.81***</td>
</tr>
<tr>
<td>(0.242)                               (0.242)</td>
</tr>
<tr>
<td>Observed_mean  0.32***                             0.32***</td>
</tr>
<tr>
<td>(0.098)                               (0.098)</td>
</tr>
<tr>
<td>Observed_inequality  0.12                           0.12</td>
</tr>
<tr>
<td>(0.161)                           (0.161)</td>
</tr>
<tr>
<td>Perceived_mean  0.34***                             0.34***</td>
</tr>
<tr>
<td>(0.093)                              (0.093)</td>
</tr>
<tr>
<td>Perceived_inequality  0.92***                       0.92***</td>
</tr>
<tr>
<td>(0.196)                           (0.196)</td>
</tr>
<tr>
<td>Constant  0.57***                                  0.57***</td>
</tr>
<tr>
<td>(0.143)                                  (0.143)</td>
</tr>
<tr>
<td>-2.80***  -2.80***                                 -2.80***</td>
</tr>
<tr>
<td>(1.088)                                 (1.088)</td>
</tr>
<tr>
<td>-2.558    -2.558                                   -2.558</td>
</tr>
<tr>
<td>(1.018)                                 (1.018)</td>
</tr>
<tr>
<td>Observations  701                                   701</td>
</tr>
</tbody>
</table>

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1
EMPIRICAL RESULTS – U.S.

The Effect of (Observed-Perceived) Inequality I

Probability of Supporting More Benefits to the Poor

Difference between Observed and Perceived Income Inequality

Less Just as Perceived (Under-Benefited)  Perfectly Just  More Just (Over-Burdened)
EMPIRICAL RESULTS – U.S.

The Effect of (Observed-Perceived) Inequality II

Probability of Supporting Higher Tax on the Rich

0 .25 .5 .75 1

Difference between Observed and Perceived Income Inequality

Less Just as Perceived (Under-Benefited)  Perfectly Just  More Just (Over-Burdened)
EMPIRICAL RESULTS – U.S.

Table 3: Difference between Observed and Perceived Income Inequality (at mean) from Individuals at the Top, Middle, and Bottom Income Quintile

<table>
<thead>
<tr>
<th>Difference between Observed and Perceived Inequality</th>
<th>Number of Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Quintile</td>
<td>-0.832</td>
</tr>
<tr>
<td>Middle Quintile</td>
<td>-0.493</td>
</tr>
<tr>
<td>Bottom Quintile</td>
<td>-0.623</td>
</tr>
</tbody>
</table>

*Note: (1) the smaller the value of the difference between observed and perceived inequality represents a less just (or under-benefited) society, i.e., observed inequality is greater than perceived inequality (2) the income quintile is set based on the 25 categories of income range in the original question from ISSP 2009
EMPIRICAL RESULTS – U.S.

*Note: the bottom quintile is the baseline; all are statistically significant except for the second quintile
EMPIRICAL RESULTS – U.S.

*Note: the bottom quintile is the baseline; only the highest quintile is statistically significant
The size of the effects is generally more noticeable whereas the direction of the effect is less consistent for the countries in PR systems compared to the ones in majoritarian systems.

*Note: this is only part of the result in Table 4*
(1) Individual preferences for redistribution are motivated by both self- and social-interest.

(2) The effect of perceived income inequality by an individual comes from social interest in evaluating social justice with respect to the income distribution.

(3) It is the difference between observed (actual) and perceived income inequality of an individual that accounts for her preferences for redistribution: individuals are less likely to support redistribution when the observed level is closer to the perceived just level.

(4) Individuals seek balance between self- and social-interest in redistribution.
Thank You!

Questions and Comments?