Counteractive Affirmative Action

COMBATING STATISTICAL DISCRIMINATION IN THE LABOR MARKET
Table 1 – 2016 US Unemployment Rates by Race and Educational Attainment

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Less than HS Diploma</th>
<th>High School Diploma</th>
<th>Some College</th>
<th>Bachelors Degree or More</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>3.6%</td>
<td>6.5%</td>
<td>4.5%</td>
<td>3.6%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Black</td>
<td>6.8%</td>
<td>14.1%</td>
<td>8.6%</td>
<td>6.1%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>4.8%</td>
<td>5.9%</td>
<td>5.1%</td>
<td>4.3%</td>
<td>3.1%</td>
</tr>
</tbody>
</table>


- Elvira and Town (2002)
- Hunter and Schmidt (1998)
Altonji and Blank (1999)

- Blinder-Oaxaca regression on wages
- Controlled for education, occupation type, age, experience, region, etc.
- Found a 21 log point wage difference, 13 of which were due to race
Statistical Discrimination
Analysis – Profit Conditions

- Hypothetical risk neutral employer
- Will make $1500 for every qualified candidate he hires
- Will lose $1000 for every unqualified candidate
- Belief that candidate is qualified \( (Pr|q = x) \)
- Will hire any candidate he believes has a 40% chance of being qualified

\[ 1500x + (-1000)(1 - x) = 0 \]

\[ Pr(q) = x = 0.4 \]
Believes 50% of white candidates are qualified to do the job

Believes 25% of black candidates are qualified

\[ Pr(q | \text{white}) = .5 \]

\[ Pr(q | \text{black}) = .25 \]
Employer gives all candidates a qualification test
- Grades of A, B, or C
- Grade distributions for qualified and unqualified candidates

<table>
<thead>
<tr>
<th>Qualified Candidates</th>
<th>Unqualified Candidates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade</td>
<td>Probability</td>
</tr>
<tr>
<td>A</td>
<td>50%</td>
</tr>
<tr>
<td>B</td>
<td>50%</td>
</tr>
<tr>
<td>C</td>
<td>0%</td>
</tr>
</tbody>
</table>

Pr(q | white) = .5
Pr(q | black) = .25
Analysis – Bayes Theorem

Pr (q | gade, race) = \frac{(Pr(\text{grade}|q))}{((Pr(\text{grade}|q)\times Prp (q|race)) + (Pr(\text{grade}|unq)\times(1-Prp (q|race))))}
Analysis – Hiring Decisions

Whites

- Pr (q| A, white) = 0.666666 = 66.667\%
- Pr (q| B, white) = 0.571428 = 57.143\%
- Pr (q| C, white) = 0 = 0\%

- Employer will hire whites who got A's or B's

Blacks

- Pr (q| A, black) = 0.4 = 40\%
- Pr (q| B, black) = 0.307692 = 30.769\%
- Pr (q| C, black) = 0 = 0\%

- Employer will hire blacks who got A's but not B's
We could change the employers profit conditions through tax policy.

To offset statistical discrimination (get blacks with B's hired), we would need to tax this employer $333.33 for every black with a B he did not hire.

\[
\begin{align*}
&\text{$1500 \times 0.30769 + (-$1000 + Z) \times (1 - 0.30769) = 0$} \\
&\text{Z = $333.33$}
\end{align*}
\]
Counteractive
Affirmative
Action

REPLICATING OPTIMAL TAxATION IN THE REAL WORLD
Counteractive Affirmative Action

- Based off of affirmative action programs
- Fully adjustable, and incentive based
- Goals of identifying and quantifying discriminant hiring practices, and offsetting this behavior through corporate income taxation
- Seven step process
CAA – Step 1

- Set the initial corporate income tax
- This rate is exogenous to the model
Determine the Maximum surplus tax

This is the maximum amount any firm will have to pay for discriminant hiring practices

In addition to the initial corporate income tax
CAA – Step 3

- Determine the racial composition of each firm
- This data would collected by the IRA
- % demographics of workforce
CAA – Step 4

- Determine if a firm is discriminatory in its hiring practices
- To do this, look for demographic imbalances
- Demographic imbalance: a significant difference between a firm's racial composition and its expected racial composition

- Firms Actual Workforce Composition = Expected workforce composition
CAA – Step 4

- Population Proportion model
- A firm's demographics should roughly match the demographics of its surrounding community
- If any racial category falls outside of a 10% margin of error, this is labeled a demographic imbalance
- Based off of census tract data
Demographics by Occupation model

Here the expected demographic balances by race are national averages by type of industry

If a firm falls outside of the 10% margin of error when compared to national averages of similar firms, then there is a demographic imbalance
CAA – Step 5

- Quantify the firms demographic imbalances
- For every identified demographic imbalance, take the observed difference between the actual and expected racial proportions
- Sum these quantities for the firms total demographic imbalance score
Calculate the firm's Effective Surplus Tax

This is the amount of the maximum surplus tax that a firm will have to pay.

\[(\text{Firm's total demographic imbalance score}/100) \times \text{Maximum surplus tax rate}\]
Step 7

- Initial corporate income tax + effective surplus tax = Firm's total tax burden (before deductions)
Counteractive Affirmative Action