The measurement of gender wage discrimination:
by
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Discussant:
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Background & motivation (1)

• Most empirical studies of discrimination in earnings by sex (or religion or race …) by economists follow the same approach
  – Blinder-Oaxaca decompositions: difference in mean wage related to differences in mean characteristics and differences in coefficients, based on OLS regression, or
  – Differences at quantiles (e.g. median) related to characteristics and coefficients, based on quantile regression
• Argument: these types of study can benefit from the perspective of income distribution analysis
Background & motivation (2)

Distinguish between:

• *Identification* of discrimination for each woman
  – Wage each woman would (or should) receive were she a man otherwise with the same characteristics
  – Currently estimated using regression methods

• *Aggregation*: summarizing the full *distribution* of discrimination experienced by each woman
  – Current approaches focus on the *average*
  – Summarize using measures satisfying a set of desirable normative properties e.g. comparisons accounting for differences in ‘discrimination aversion’
Outline of this paper

2. Normative properties of measures for aggregating discrimination: orderings and indices
3. Identification: extension making use of quantile regressions
4. Application examining wage discrimination among Spanish women:
   - which groups are most discriminated against?
   - evidence about glass ceilings and sticky floors
1. Critique of existing distributional approaches

Define

\[ y_f : \text{observed wage for a woman (includes discrimination)} \]
\[ r_f : \text{wage for a woman if no discrimination (‘fair’ wage)} \]
\[ x_f = r_f - y_f : \text{‘wage gap’} \]

• Several papers going beyond Blinder-Oaxaca methods focussing on means, most based on quantile regressions
  – Problem: they compare marginal distributions for women and men; not the joint distribution of woman’s wages and woman’s ‘fair’ wage, or the wage gap distribution

• Jenkins (1994) looked at the joint distribution, but it is argued that he did so inappropriately
  – Issue: how to handle cases in which wage gap is negative (see later)
2. Normative properties for measures

• Argument: measurement of discrimination is exactly analogous to the measurement of poverty,
  – wage gap $r_f - y_f$, versus poverty gap $z_f - y_f$

• So, apply all the measures developed for poverty measurement to discrimination
  – TIP curves to compare distributions of wage gaps
  – Foster-Greer-Thorbecke-type summary indices, which are decomposable by population subgroup

• Rests on key assumption (Focus axiom)
  – Negative wage gaps ($y_f > r_f$) set equal to zero
  – Aggregation based on censored distributions
3. Identification of wage gaps

- Studies usually use OLS regressions to identify the fair wage
  - Conditional on characteristics, estimate derived using an expected value (mean)
- This study: consider also fair wage for a woman at the bottom of the wage distribution defined to be the wage for a man at a similar rank in the distribution of men’s wages
  - Conditional on characteristics, estimate derived using quantile regressions
4. Illustrative application for Spain

- 1995 Encuesta de Estructura Salarial (Survey of Wage Structure)
- Employees in firms with 10+ employees; no wage data for those in agriculture, public sector (admin, health, education)
- Sample selection: part-time workers excluded
- \( N_f = 27,085 \), \( N_m = 100,208 \)
- 99% of women earn less than men (controlling for differences in characteristics)
- Comparisons of discrimination using OLS and QR approaches to identification
  - Covariates: tenure, experience, education, region, contract type, occupation, firm size, etc.
Some results (1)

- Discrimination greatest at the bottom of women’s wage distribution
- Similar patterns for OLS and QR approaches
Some results (2)

- Results separately by whether woman has university degree

Fig. 7a Discrimination by deciles non-university degree: $d_{aw2}$ ratio
(overall population average = 1)

- 'Sticky floor'

Fig. 7b Discrimination by deciles university degree: $d_{aw2}$ ratio
(overall population average = 1)

- ‘Glass ceiling’
Comments (1)

• Empirical application would be more effective if looked e.g. at trends over time in discrimination

• Should the wage regressions for women take account of sample selection in Heckman sense?

• QR approach to Identification: I need more convincing that the ‘fair’ (no discrimination) wage for a woman should be based on comparisons with men at similar ranks in the wage distribution – why is that information relevant?

• If discrimination measurement analogous to poverty measurement, then no need to develop all the measures again at great length: focus on what is new and different
Comments (2)

- Is the analogy between discrimination measurement and poverty measurement really as close as argued here?
  - Jenkins (1994) used analogies with horizontal inequity measurement, not poverty (but proposed the same tools)
  - Want to summarize ‘distance’ between $r_f$ and $y_f$ for each woman
  - If $r_f$ really is the ‘fair wage’, then shouldn’t we take account of negative gaps as well as positive ones, rather than ignore, as here?
  - But how? Unclear that we should treat positive and negative gaps symmetrically (as Jenkins 1994 did)

- Should our efforts perhaps go into improving Identification rather than Aggregation aspects?