

# Race and Gender in the Labor Market: Extract

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# **Theories of race and gender differences in labor market outcomes**

*The impact of group differences in preferences and skills*

# *Differences in preferences*

# *Differences in comparative advantage*

- Almost any model of human capital investment says that investment in valuable marketplace skills will be lower among those who expect to spend less time in the marketplace.
- This line of reasoning suggests that as birth rates, marriage rates and marital stability have declined, gains from specialization between men and women should have fallen and the labor market consequences of any biologically based comparative advantage should have declined.
- Over a longer period of time, the declining importance of physical strength and the growing importance of cognitive skill and interpersonal skill should have further reduced gender differences in comparative advantage.

# *Differences in human capital investment*

# **Socialization: Preference Formation**



- Pre-labor market discrimination may also have reduced women's human capital investments by affecting their quality of schooling, fields of study, and access to higher education.

*An introduction to theories of  
discrimination*

# *Defining discrimination*

- We define labor market discrimination as a situation in which persons who provide labor market services and who are equally productive in a physical or material sense are treated unequally in a way that is related to an observable characteristic such as race, ethnicity, or gender.
- By "unequal" we mean these persons receive different wages or face different demands for equal levels of services at a given wage.

- It is hard to distinguish between the effects of past discrimination versus current discrimination on productivity-based characteristics.
- Past labor market and pre-labor market discrimination against a group has feedback effects on the human capital of future generations and may lead to persistent group differences in skills (Loury, 1977).

# **Taste-based discrimination**

*Becker's analysis of employer, employee,  
and consumer discrimination*

# *Employer discrimination*



- Becker (1971) modeled prejudice as a "taste" for discrimination.
- He defined employer discrimination as a situation in which some employers were prejudiced against members of group  $B$ , the minority group.
- Employers maximize a utility function that is the sum of profits plus the monetary value of utility from employing members of particular groups.
- Let  $d$  be the taste parameter of the firm, which Becker called the "coefficient of discrimination".

- To be specific,

$$U = pF(N_b + N_a) - \omega_a N_a - \omega_b N_b - dN_b, \tag{3.2}$$

where  $p$  is the price level,  $F$  is the production function,  $N_g$  is employment of members of group  $g$  ( $g = A, B$ ), and  $\omega_g$  is the wage paid to members of group  $g$ .

- Let  $G(d; \bar{d})$  denote the CDF of the prejudice parameter  $d$  in the population of employers
- $\bar{d}$  summarizes the location of the distribution
- The fraction of firms that hire B workers is  $G(\omega_a - \omega_b; \bar{d})$
- The optimal number of workers hired is determined by the solution to

$$pF'(N_a) = \omega_a \tag{3.3a}$$

for firms that hire A workers, and

$$pF'(N_b) = \omega_b + d$$

for firms that hire B workers. The number of workers hired is decreasing in  $\omega_a$  for firms

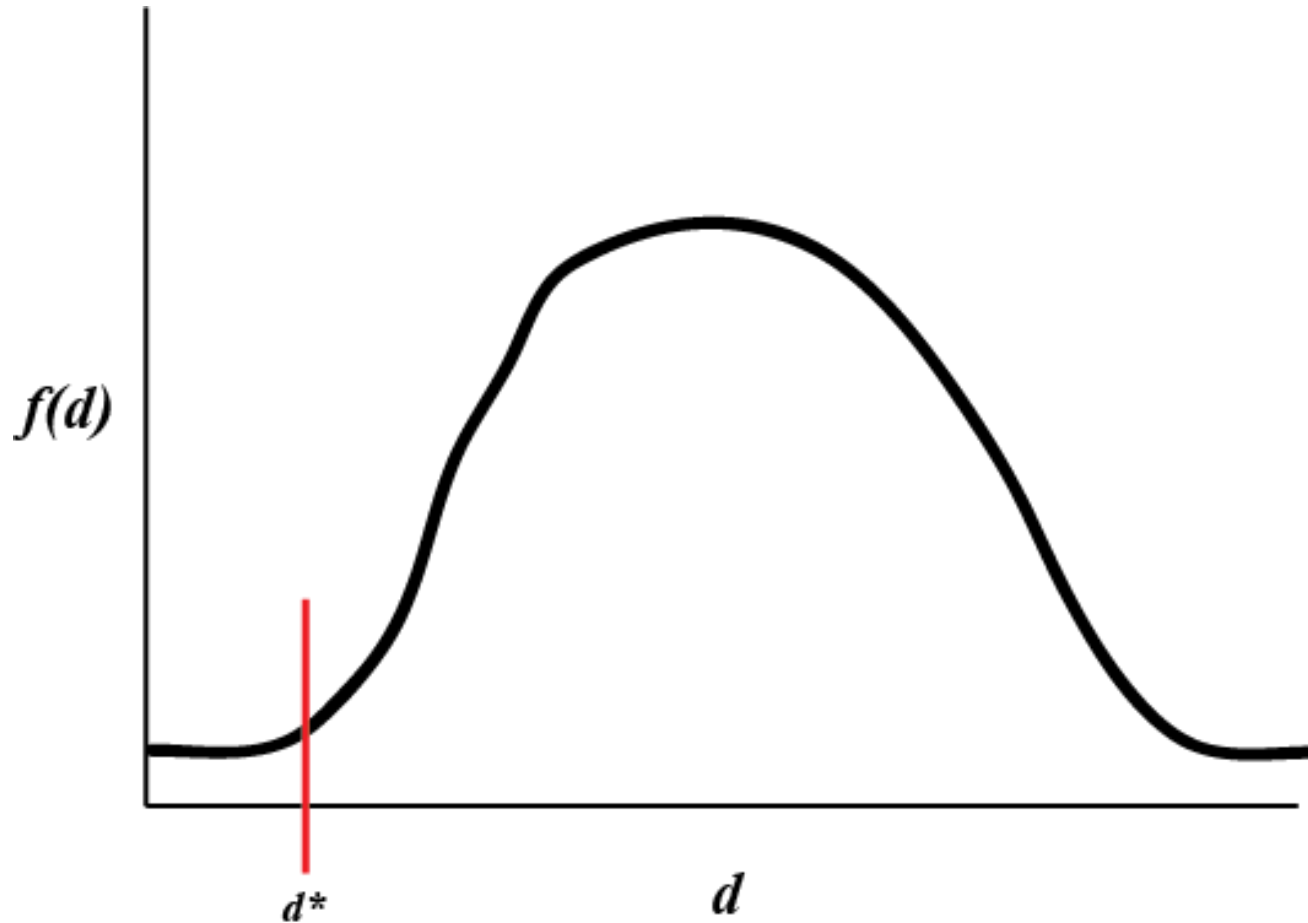
- The wages for the two groups are determined by the solution to the two equations

$$N_a^d(\omega_a, \omega_b; \bar{d}) = N_a^s(\omega_a), \tag{3.4a}$$

$$N_b^d(\omega_a, \omega_b; \bar{d}) = N_b^s(\omega_b), \tag{3.4b}$$

where  $N_g^s(\omega_g)$  is the supply function of group  $g$  workers.

## *Distribution of $d$*



- Marginal discriminator sets the wage

## *Traditional “Wisdom”:*

- If there is free entry and/or constant returns to scale, then in the long run non-discriminating employers will increase to the point that it is no longer necessary for  $B$  workers to work for prejudiced employers.
- This will eliminate the wage gap.

*Not True if There Are Costs of Entry*

## *Employee discrimination*

- Becker also discusses the consequences of employee discrimination and consumer discrimination.

- Workers are Leontief complements
- $\text{Min}(A, B)$
- $A$ : unskilled
- $B$ : skilled
- Skilled workers have distaste  $\phi$
- Solution: Pair Blacks with Blacks, Whites with Whites
- May run out of skilled workers of same race
- Next best people set the margin of discrimination



# *Consumer discrimination*

- Becker also presents a model of consumer discrimination.
- In this model, prejudiced consumers in group *A* get less utility if they purchase from a group *B* member than from a group *A* member.
- Consequently, they will only purchase from *B* members if the asking price is reduced, lowering the labor market payoff for group *B* members to working in occupations with customer contact.
- The effect of such discrimination on wages is reduced to the extent that *B* members can serve only *B* customers and unprejudiced *A*'s, or to the extent that *B*s can work in occupations without customer contact.

*Taste-based discrimination when search is costly*

- First, in these models the whole distribution of prejudicial tastes matters, not simply the prejudice of the marginal firm (or customer) who employs a member of group  $B$ .
- Second,  $B$  workers are at a disadvantage even when their numbers are small relative to the number of non-discriminating customers.
- Third, discrimination is unlikely to be eliminated by entry of new firms or changes in human capital investments by  $B$  workers.

## *Employer discrimination with costly search*

- See Black

*Consumer discrimination with costly search*

# *Employee discrimination and costly search*

# **Discrimination and occupational exclusion**

- See Altonji and Blank



**Statistical discrimination, worker incentives, and the consequences of affirmative action**

- There are two main strands to the statistical discrimination literature.
- The first investigates how prior beliefs about the productivity of group members can influence hiring and pay decisions.
- One important issue is whether biased racial and gender stereotypes might be self confirming when the payoff for hard-to-observe worker investments depends on employer beliefs.
- The second strand of literature concerns the consequences of group differences in the *precision* of the information that employers have about individual productivity.

*Statistical discrimination: the role of stereotypes*

*Statistical discrimination: group differences in the quality of employer's information*

- Lundberg (1991) uses a model of statistical discrimination developed by Aigner and Cain (1977) and extended in Lundberg and Startz (1983) that has been quite influential.
- The key assumption of the model is that the accuracy of the information that firms have about the productivity of individuals differs across groups.
- They show that this can lead to an equilibrium in which firms statistically discriminate on the basis of group membership and groups differ ex post in productivity even though the mean of innate ability is the same for all groups.

- The Lundberg and Startz model:
- The marginal product MP of worker  $i$  is

$$MP_i = a_i + e_i, \tag{3.37}$$

where  $a_i$  is innate ability and  $e_i$  is acquired human capital, which we normalize to affect MP with a coefficient of 1.

- The marginal cost is

$$C'(e_i) = ce_i, \tag{3.38}$$

where  $c$  is a scalar.

- The productivity indicator is determined by

$$\theta_i = MP_i + \varepsilon_i. \quad (3.39)$$

Firms pay  $w_i = E(w_i|\theta_i)$ , which if the errors are jointly normal and independent implies

$$w_i = \overline{MP} + \beta(\theta_i - \bar{\theta}), \quad (3.40)$$

where  $\beta = \sigma^2 / (\sigma_\varepsilon^2 + \sigma^2)$  is the variance of MP, and  $\sigma_\varepsilon^2$  is the variance of the random component of the noisy signal  $\theta$ .

- For an individual the response of wages to human capital investment is  $\beta$ .
- To see how statistical discrimination may lead to group differences in the mean of  $w_i$ , suppose that the training cost parameter  $c$  and the mean of innate ability  $a_i$  is the same for the groups  $A$  and  $B$ , but  $\theta$  is less informative for group  $B$  than  $A$ , with  $\beta_B < \beta_A$ .
- In this situation, firms that are permitted to "statistically discriminate" will use separate wage equations for the two groups.
- The return to human capital investment will be lower for group  $B$  than group  $A$  members.
- In equilibrium, this will lead group  $B$  members to invest  $\beta_B/c$ , which is less than the amount  $\beta_A/c$  group  $A$  members will invest.
- A wage gap between the groups will develop.



- Lundberg and Startz show that forbidding firms to use separate wage schedules conditional on  $\theta_i$  will eliminate the group differences in human capital investment and wages.
- It will also lead to an efficiency gain because the induced increase in training for group *B* comes at a lower marginal cost.
- Lundberg (1991) makes the point that preventing firms from using group specific equations to estimate the productivity of an individual will reduce the accuracy of their estimates of productivity.
- If output depends on the quality of the match between the job and the worker, then the reduced accuracy may result in an efficiency loss.

- She points out that an outcomes-based policy such as affirmative action may be preferable to an "equal treatment" policy both because the latter is hard to enforce given the heterogeneity of workers and because an affirmative action policy would allow firms to make group specific assessments provided that outcome goals were met.
- There is a research base in psychology suggesting that male managers may be a worse judge of their female employees than their male employees.
- Cultural and language differences may make assessments by mostly white male managers of the performance of black and female employees less accurate, as Lang (1986, 1993) stresses.
- In this case, cultural and language differences among workers may affect productivity.

- In addition, social networks tend to run along gender and racial lines, and referrals and personal contacts are an important conduit of information in the labor market.
- As Montgomery (1991) shows formally, groups that are poorly represented in higher level positions may be at an information disadvantage.
- On the other hand, we are unaware of any empirical work that systematically investigates the proposition that the "signal to noise" in employer assessments of workers is lower for women than men or for blacks than whites, despite the prominence of this idea in the discrimination literature.
- For this reason, we are not clear how much weight should be placed on the statistical discrimination/information quality explanations for differences in group outcomes, nor are we sure about how seriously to take the policy analysis that results from these models.