

## 2.3 Discrimination Due to Inter-Group Interactions

### 2.3.1 Moro and Norman (2001)

- Moro and Norman's (2001) paper builds upon Coate and Loury. The main changes are:
  - An aggregate production function

$$y(C, S)$$

where  $C$  is the total quantity (measure) of qualified workers who are employed on the complex task, and  $S$  is the total quantity of workers on the simple task; Standard neoclassical assumptions are imposed on  $y(\cdot, \cdot)$ : concavity, strictly increasing in both arguments and constant returns to scale.

- Wages are endogenously determined. Specifically, they assume that firms compete for workers by offering wages schedules as a function of  $\theta$ , the test signal observed.
- When  $y(C, S) = C + S$ , endogenizing wages do not change much of CL's results:
  - discriminatory equilibrium may still arise as a result of two groups coordinating on different equilibria.
- When  $y(\cdot, \cdot)$  is not linear, new insights emerge:
  - the two groups now interact with each other through the production function, and the wages offered to blacks will depend not only on the firms' belief about the proportion of skilled workers among blacks, but also on the firms' belief about the proportion of skilled workers among whites.

- This creates externality between the two groups: in particular, they show that as the proportion of skilled workers in group W increases, the incentive to invest in skills among group B workers decrease.
- It is this inter-group externality that generates discriminatory outcome as a result of *specialization*: for example, the outcome that whites specializes in the complex task and the blacks in the simple task can be sustained as an equilibrium because of the inter-group externality in the skill investment incentives.
- A feature unique to this model is: when affirmative action is imposed, both groups are going to be affected; hence one can naturally rationalize the conflict of interests we see in the debates of affirmative actions.

### 2.3.2 Mailath, Samuelson and Shaked (AER, 2000)

- So far, theories of statistical discrimination is based on information friction in the labor: race-dependent hiring policies are followed because race is used as a proxy for information about the workers' skills.
- Paradoxically, statistical discrimination models do not yield economic discrimination: all workers are paid their marginal product and given skills, color plays no role in explaining wages.
- MSS instead propose a model of an integrated labor market and focus on search friction instead of information friction.

## THE MODEL

- A continuum of firms and workers. Firms and workers' die with Poisson rate  $\delta$  and they are replaced by identical new firms and workers [cloning]. The total population of both workers and workers are 1;
- Continuous time, with interest rate  $r$ ;
- All firms are identical, and workers come with a label, red or green, that has no direct payoff implication. Assume that half of the population has red label;
- Upon entering the market, each worker makes skill acquisition decision. If one acquires skills, he can enter the skilled sector of the economy. Whether a worker is skilled or not is observed to the firms;

- Workers differ in the opportunity cost of acquiring skills,  $c \geq 0$ , and in the population  $c$  is distributed according to CDF  $G$ ;
- Each firm can hire at most one worker. If a firm employs a skilled worker, regardless of his color, a flow surplus of  $x$  is generated; the flow surplus from hiring an unskilled labor is 0;
- Search Friction: Vacant firms (firms without employees) and unemployed workers match through searches. [The firm can choose to search both groups, or only one group, not the search intensity itself]
- When an unemployed worker and a vacant firm match, they bargain over the wage with one of them randomly drawn to propose a take-it-or-leave-it offer.

## RESULTS:

- Besides the symmetric steady state equilibrium, they are interested in asymmetric steady state equilibrium.
- Suppose that firms search only for green workers. Hence skilled green workers will earn higher wages than skilled red workers not only because their match rate will be higher, but also because once matched with a firm, the green worker can demand, or will be offered, a higher wage because his continuation utility is higher. Hence the incentive to invest in skills are higher for the green workers.
- The question is, will firms find it optimal to only search for green workers? The trade-off is as follows: on the one hand, once a firm is matched

with a skilled red worker, the wage a skilled red demands is lower, this will create incentive for searching for red workers; on the other hand, when the red workers' incentive to invest in skills is low, the proportion of skilled red workers will be lower, so the probability of being matched with a red skilled worker if the firm searches also the red workers is low, this creates incentives against searching for red workers.

- They show that under some conditions asymmetric steady state equilibrium can be sustained.
- In the asymmetric equilibrium of MSS, the skilled red and green workers are equally productive (since their skills are perfectly observable), yet they are offered different wages (which is economic discrimination).