Chapter 9, part I

Po-Chun Huang
NCCU, Spring 2021

Road map

Chapter 2 – Chapter 4: The basics

- Labor supply, labor demand, and equilibrium
- It gives us the basics for what determines the wage

The rest of the course mainly focuses on further reasons why wages differ across people

- Chapter 5: Compensating differentials
  - Differential job attributes can lead to wage differences
- Chapter 6: Human capital
  - Differential skill can lead to wage differences
- Chapter 8: Migration (covered during Chap. 4)
- Chapter 9: Labor Market Discrimination
  - Individual wages vary for seemingly irrelevant reasons (race, gender, national origin, sexual orientation…)

Outline

1. The basic race and gender gaps
2. The economics of discrimination
3. Evidence on discrimination

1. The basic race and gender gaps

Earnings gaps by gender and race

Some is due to education and labor supply, but much is not

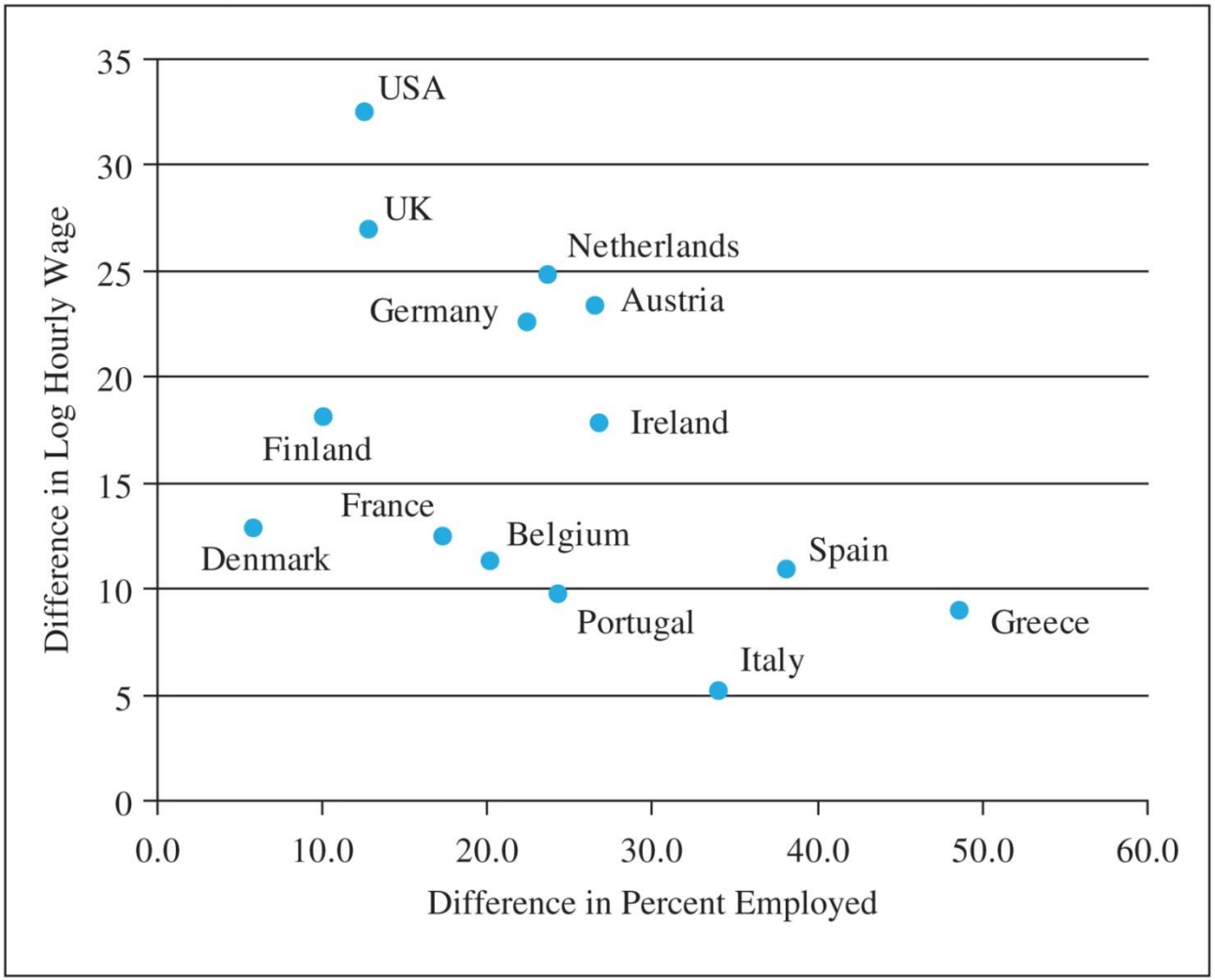
TABLE 9-1 **Gender and Racial Differences in Skills and Labor Market Outcomes, 2009–2010**

Sources: The data on educational attainment refer to persons aged 25 and over and are drawn from *U.S. Statistical Abstract 2011*, Table 226, "Educational Attainment by Race, Hispanic Origin, and Sex: 1970 to 2009." The data on labor force participation and unemployment rates refer to persons aged 20 and over and are available online at www.bls.gov/cps/cpsatabs.htm. The data for Asians refer to persons aged 16 and over. The data on earnings refers to workers aged 25 and over and are drawn from "Table PINC-03, Educational Attainment—People 25 Years Old and Over, by Total Money Earnings in 2009, Work Experience in 2009, Age, Race, Hispanic Origin and Sex," www.census.gov/hhes/www/income/dinctabs.html.

	White		Black		Hispanic		Asian	
	Male	Female	Male	Female	Male	Female	Male	Female
Percent high school graduate or more	86.5	87.7	84.0	81.1	60.6	63.3	90.4	86.2
Percent bachelor's degree or more	30.6	29.3	17.8	20.6	12.5	14.0	55.7	49.3
Labor force participation rate	74.6	59.9	69.5	63.2	82.6	59.5	73.2	57.0
Unemployment rate	8.9	7.2	17.3	12.8	11.7	11.4	7.8	7.1
Annual earnings (in $1,000)	55.8	37.0	41.2	32.5	35.2	28.1	66.6	45.9
Annual earnings (among workers employed full-time, year-round) (in $1,000)	65.9	47.0	48.4	39.5	42.8	35.3	76.1	55.2

And it isn't just the US…

…although it is larger in the US



Gaps can arise for many reasons

- Labor market discrimination
  - Roughly, individual are paid differently for non-productivity reasons because of group membership
- Different background characteristics associated with productivity
  - Example: different educational levels
  - Different educational levels could have been due to discrimination—but that is not labor market discrimination
  - This is relatively easy to take into account
- Tastes / preferences
  - Example: might individuals prefer to work differently around childbearing
  - This is relatively hard to take into account

The issue: how much of the gap is due to the various potential explanations?

2. The economics of discrimination

The economics of discrimination

- Taste-based discrimination
  - Seminal work by Gary Becker
  - For some reason, a group is systematically targeted
  - Example: the perceived wage of hiring a black employee might be $w_B(1+d)$
    - d is positive, perhaps .5
    - "Discrimination coefficient"
    - The employer simply doesn't like to hire blacks
  - Three types of taste-based discrimination
    - Employer discrimination: employers pay a wage penalty to hire a particular worker type
    - Employee discrimination: workers undervalue wage if they work next to a particular type
    - Customer discrimination: customers pay a wage premium to buy from a worker of a particular type
- "Statistical" discrimination
  - Pay differentials when a particular type of worker is correlated with unobserved attributes

Employer discrimination

The model

- Suppose blacks and whites are perfect substitutes
- Wages: w_B and w_W with $w_B < w_W$ set by the market
- Employment levels: E_B and E_W
- Production: $q=f(E_B + E_W)$—implies the VMP_E is the same for both workers

Non-discriminatory firms

- Hire only black workers (wage is less) until $w_B=VMP_E$

Discriminatory firms

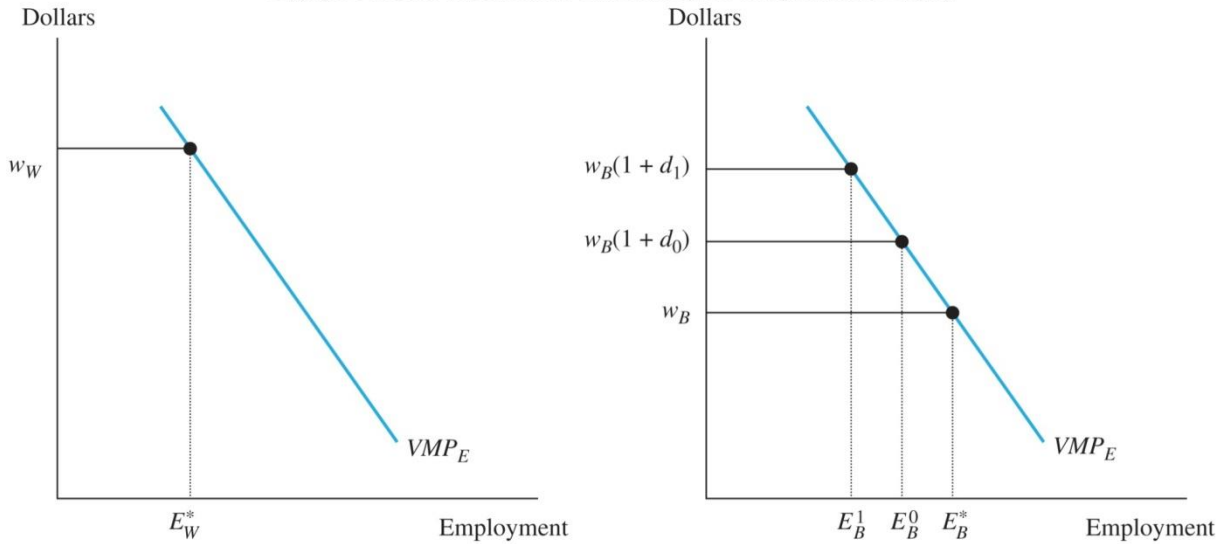
- Let d be the coefficient of discrimination
- Hire only blacks if $w_B(1+d)<w_W$ until $w_B(1+d)=VMP_E$
- Hire only whites if $w_B(1+d)>w_W$ until $w_W=VMP_E$

Employer discrimination

Implication 1: There is complete worker segregation at all firms

Discriminatory firms with low d will have an all-black work force because it is more profitable

Implication 2: Discriminatory firms are too small, with the degree of being too small being determined by d

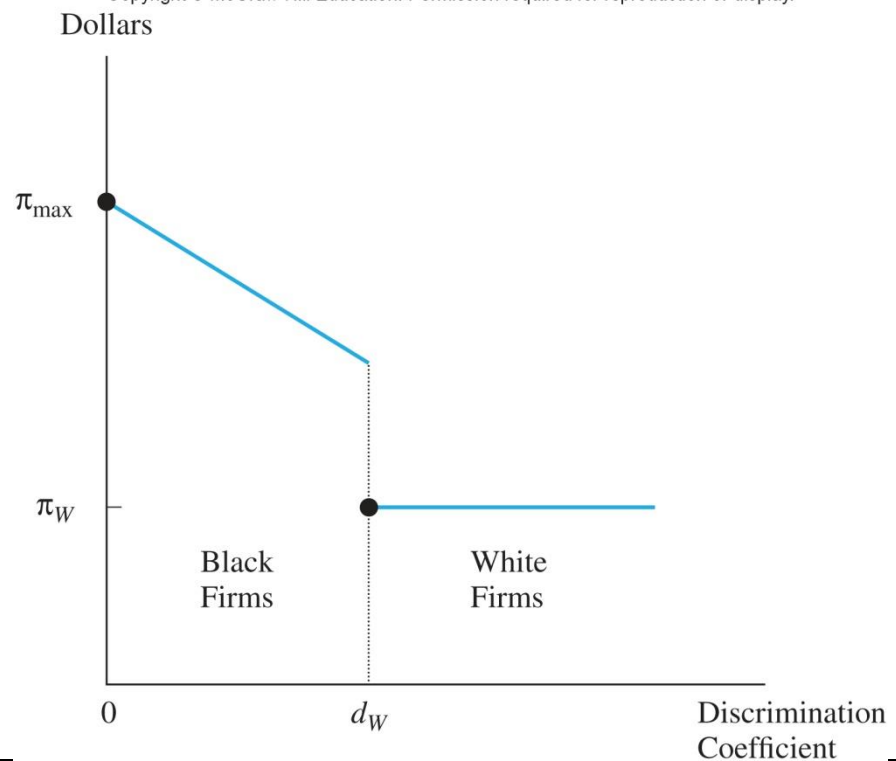


(a) White Firm (b) Black Firm

Employer discrimination

Implication 3: Discrimination results in lower profits

- Non-discriminatory firms hire blacks, who have lowest wage, until w=VMP
- Firms that are slightly discriminatory hire blacks, but fewer of them
- White firms hire highest wage workers and are small



Employer discrimination

Corollary: Discriminatory firms may be driven out of the market

- Discriminatory firms can make more money by selling to non-discriminatory owners. Will they? Depends on how they view the non-discriminatory firms…

Labor market equilibrium

- We started our analysis by assuming $w_B < w_W$
- However, we should expect that the wage gap is determined by an equilibrium
- Consider the relative wage of blacks, w_B / w_W
- Supply of black workers: perfectly inelastic
- Demand of black workers
  - Demand of non-discriminatory firms is perfectly elastic as long as relative wage is 1, up to the point that non-discriminatory firms exist—they are indifferent
  - Demand increases as the relative wage declines because more and more discriminatory firms are induced to hire black workers

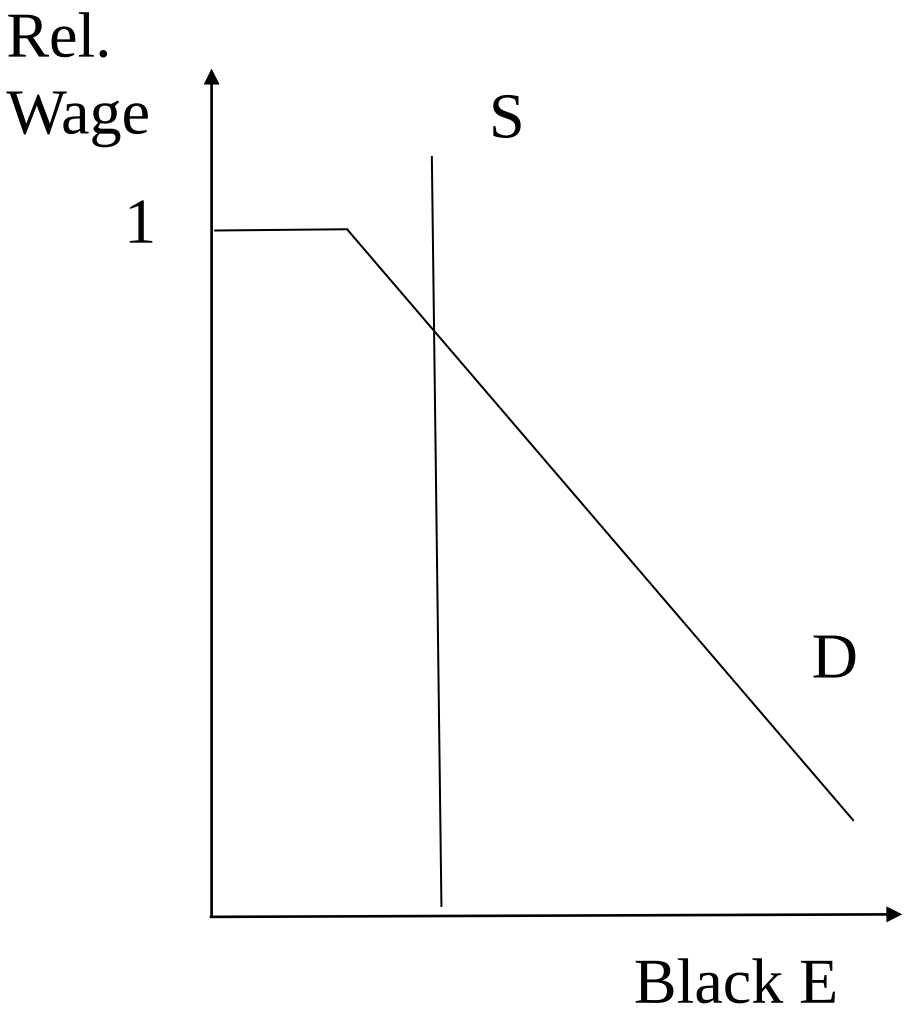
Employer discrimination

Picture differs from the book

- I allow there to be non-D firms

Case 1: few non-D firms

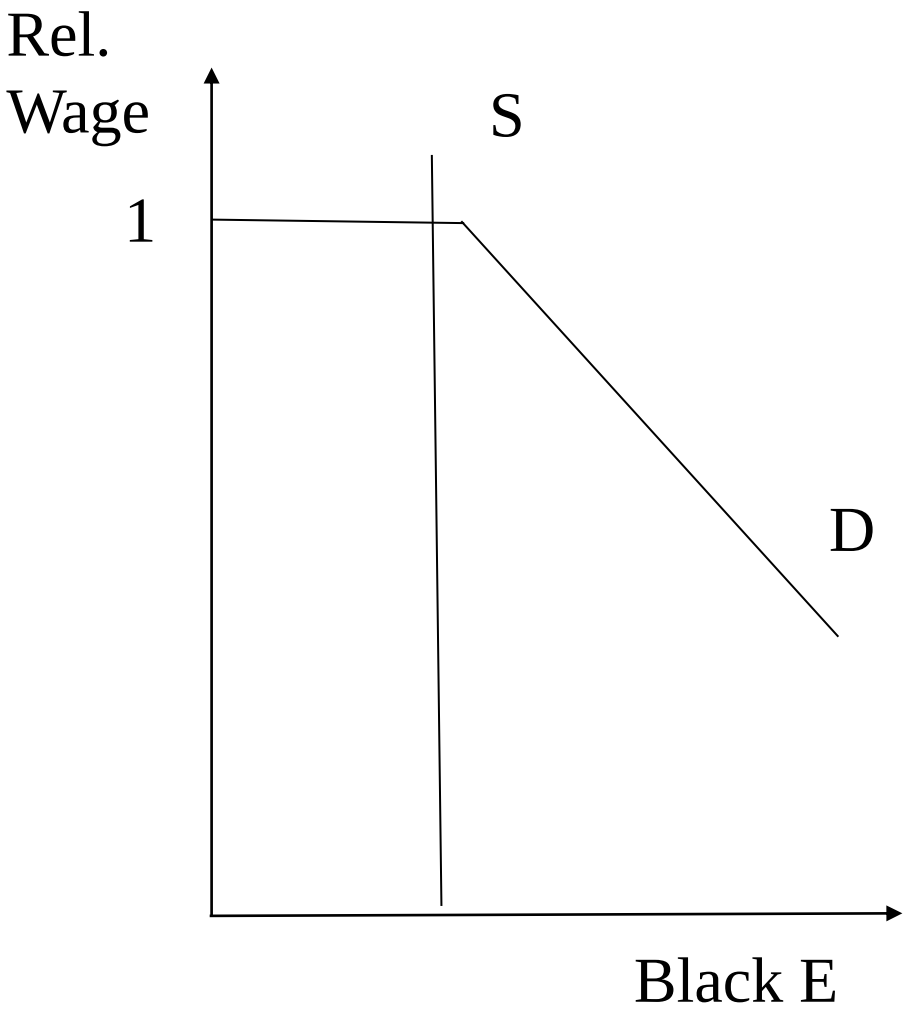
- Result: equilibrium relative wage is less than 1
- Why? Too few non-discriminatory firms exist to employ black workers



Employer discrimination

Case 2: enough non-D firms

- Result: equilibrium relative wage is 1
- Why? Enough non-discriminatory firms exist to employ black workers
- Point 1: like always, the wage is set by the marginal firm—is the marginal firm non-discriminatory?
- Point 2: if blacks are 10% of the population, then we only need 10% of employers to be non-discriminatory
- Point 3: complete segregation still exists



Employer discrimination

Implication 4: the equilibrium wage differential is set by the degree of discriminatory tastes at the marginal firm

- We would expect there to be segregation, with blacks seeking out the least discriminatory employers
- This segregation could explain “ethnic enclaves” or the residential segregation that we observe in many cities: blacks locating to minimize the effects of discrimination
- It doesn’t take many non-discriminatory firms to offset discriminatory firms—because profits exist

Bottom line: profit opportunities undermine the possibility of sustaining discrimination, as well as make the discriminatory firms pay

Employee discrimination

Suppose employees are discriminatory, not employers

- Employers might not care about the race of their employees—they might not even be at the business place
- But employees might care: Suppose you have to pay whites a premium to work next to blacks

Implications

- Employers should hire either blacks or whites—it costs more to mix them
- There should not be an equilibrium wage differential!
  - Why? The employers don't care who they hire, they just hire those with the lower wage. They will always hire workers until w=VMP—but keep the workers segregated

Bottom line: employee discrimination would not lead to systematic wage gaps

Customer discrimination

Suppose employers and employees are non-discriminatory, but customers are

- The idea: the utility adjusted price paid to buy from a black person is p(1+d) by a discriminatory customer

Implication: if firms can “hide” the offending workers, there need not be any affect on wages

- A firm would benefit by having blacks fill the “back-office” jobs, with whites filling “contact” jobs
- As long as jobs are equally productive, there should be no wage gap
- This model might predict occupational segregation and industrial segregation, rather than strict firm segregation

Customer discrimination

Some D-D evidence

- Table gives the percent of newly hired workers that are black
- More blacks are hired in black areas than white areas
  - Not surprising—more blacks live there
- Compare firms in the areas where there is customer contact versus those where there is not customer contact
  - Contact firms are 14.6% more likely to hire blacks in black areas compared to white areas

TABLE 9-2 **Relation between Customer Discrimination and Percentage of Newly Hired Workers Who Are Black**

Source: Harry J. Holzer and Keith R. Ihlanfeldt, "Customer Discrimination and Employment Outcomes for Minority Workers," *Quarterly Journal of Economics* 113 (August 1998): 846.

Type of Firm	More Than Half of Firm's Customers Are Black	More Than 75% of Firm's Customers Are White	Difference
Contact between customers and workers	58.0%	9.0%	49.0%
No contact between customers and workers	46.6	12.2	34.4
Difference-in-differences	—	—	**14.6**

Statistical discrimination

A model where employers have no distaste for, say, females, but instead use group status to make infer about unobserved tendencies

- Think “profiling”

Story

- Two 24-year-old applicants show up with absolutely equal qualifications on all fronts for a job where training is costly
- History at the firm suggests that women are more likely to leave between ages 26 than 30 then do men
- Employer chooses the male over the female because she doesn’t know if the female is the leaving type
- In other words, group membership is used to make inferences about unobserved information—the manager doesn’t dislike females, but instead knows females are more likely to leave

Statistical discrimination

The book goes through a model, but it is easier than that

Result: In situations where there is asymmetric information and group status is correlated with the unknown information, employers can gain by statistically discriminating

A few comments

- Statistical discrimination happens all the time: Teenagers are charged a higher price for auto insurance
- Statistical discrimination IS discrimination—and is generally precluded by law in the employment relationship for members of the protected class