Introduction

• Labour Market Discrimination is another possible reason that might explain wage dispersion.

• Discrimination occurs when participants in the marketplace (e.g. employers, employees, customers) take into account such factors as race and sex when making economic exchanges.

• More elaborate definition:
  Discrimination occurs when there are different earnings and employment opportunities across equally skilled workers employed in the same job because of workers’ race, gender, national origin, sexual orientation, age, religion, ‘beauty’ etc.
9-1 Race and Gender in the Labour Market

Some US & international data on gender and racial differences in skills and labour market outcomes:
- Men earn more than women and whites earn more than nonwhites.
- But differences in educational attainment between whites and nonwhites and differences in the proportion of part-time versus full-time work clearly generate earnings differentials and explain some of the observed differences.

For additional NZ data (some were shown for earlier topics) see, for example:

9-2 The Discrimination Coefficient

Gary Becker’s neoclassical ‘taste discrimination model’!
- **Taste discrimination** – a concept that essentially translates the notion of racial prejudice into the language of economics.
  - Assume two types of workers earning competitive hourly wages: Black workers earn wage $w_B$ and white workers earn wage $w_W$.
    - Instead of black or white workers, you could substitute ‘male or female’, ‘white or Asian’, ‘catholic or protestant’, ‘gay or straight’, ‘beautiful or ugly’, and many others!
  - Assume the employer is prejudiced against black workers and this prejudice enters his/her utility function as disutility. Even though it costs $w_B$ dollars to hire one person-hour of black labour, the employer will act as if it costs $w_B(1+d)$ dollars, where $d$ is positive and called the **discrimination coefficient**.
  - Racial prejudice causes employers to blindly perceive the costs of hiring blacks as higher than their true costs.
Taste discrimination ctd.

- There can also be a kind of ‘reverse discrimination’: **Nepotism**.
  - Assume some employers prefer to hire black workers.
  - The employers utility-adjusted cost of hiring a black worker is then less than otherwise: \( w_B (1-n) \) dollars; where \( n \) is a positive number called the **nepotism coefficient**.
  - In this case racial prejudice causes employers to blindly perceive the costs of hiring blacks as **lower** than their true costs.

Becker’s model can be applied in many different circumstances.
- The discrimination coefficient ‘monetises’ prejudice, regardless of whether the source of the prejudice is the employer (employer discrimination), the employee (employee discrimination), or the customer (customer discrimination).
- In a sense, the labour market has to generate a compensating differential to compensate prejudiced persons for their utility loss or gain!

9-3 Employer Discrimination

- Assume \( q = f (E_W + E_B) \). Other inputs than labour are neglected.

- Both types of workers are assumed to be **perfect substitutes** and **equally productive**. The last worker hired (of whichever type) has MP\(_E\).

- If the employer does not discriminate, s/he will hire whichever type of worker is cheaper!
  - For example, if \( w_B < w_W \), the firm will hire **only** black workers (up to the point where \( w_B = VMP_e \)). See Figure 9-1.

- In short, if blacks and whites are perfect substitutes and their wages differ, employers have a segregated work force (an implication of the Becker model).
Figure 9-1: The Employment Decision of a Firm That Does Not Discriminate

If the market-determined black wage is less than the white wage, a firm that does not discriminate will hire only blacks. It hires black workers up to the point where the black wage equals the value of marginal product of labour, or $E_B^*$. 

Employer discrimination ctd.

If the employer does discriminate:

- Assume the employer acts as if $w_g$ equaled $w_g(1+d)$.
- Decision rule in this case:
  - Hire only blacks if $w_g(1+d) < w_W$
  - Hire only whites if $w_g(1+d) > w_W$
- In this case, too, employers will have a segregated work force! We end up with ‘all white’ and ‘all black’ firms.
  - In our case with $W_B < W_W$, non-prejudiced employers hire only blacks, very prejudiced employers hire only whites. See Figure 9-2.
- The prejudiced employer will hire too few workers (whites or blacks)!
Figure 9-2: The Employment Decision of a Prejudiced Firm

Firms that discriminate can be either white firms (if the discrimination coefficient is very high) or black firms (if the discrimination coefficient is relatively low). A white firm hires white workers up to the point where the white wage equals the value of marginal product. A black firm hires black workers up to the point where the utility-adjusted black wage equals the value of marginal product. Firms that discriminate hire fewer workers than firms that do not discriminate.

Employer discrimination and profits

- Important insight of Becker’s model: Discrimination does not pay.
  - By hiring the wrong colour workers and/or the wrong number of workers, a prejudiced employer pays a wage above the competitive wage and does not hire enough workers, resulting in lower output and profits than without discrimination! See Figures 9-2 & 9-3:
    - Highest profit where \( d = 0 \) and firm hires \( E^*_b \) black workers.
    - Small \( d \): Still ‘all black’ firm, but fewer workers hired & lower profit.
    - High \( d \): ‘All white’ firm, very low profit.

- Far-reaching implication: In competitive markets, discriminating employers should eventually disappear or abandon discrimination (the zero economic profit condition of competitive markets implies that discriminating firms cannot generally persist in the long-run).
Figure 9-3: Profits and the Discrimination Coefficient

Discrimination reduces profits in two ways. Even if the discriminatory firm hires only black workers, it hires too few workers. If the discriminatory firm hires only white workers, it hires too few workers at a very high wage.

The Black-White Wage Ratio in the Labour Market

- Use decision rule of discriminating employer to derive market demand curve for black workers.
- Assume first that all employers discriminate (all \(d\) are positive).
- Think in terms of the black/white wage ratio: \((w_B/w_W)\)
- Compare black wage with white wage (Figure 9-4)(Note: These are the actual, not the utility-adjusted wages). Assume the black-white wage ratio falls further and further. At first no black workers get hired etc. As it falls below a certain level \((R)\), more and more get hired etc.

- **Some features of the equilibrium in Figure 9-4:**
  - It usually occurs below the point where the wage ratio equals 1, i.e., employer discrimination generates a wage gap between equally skilled black and white workers. In a sense, black workers must 'compensate' prejudiced employers!
  - Black workers are matched with employers who have the least prejudice.
  - Note that if some firms discriminate in favour of black workers (nepotistic firms), and the supply of black workers is small, the wage ratio could end up greater than 1, even if most firms discriminate against black workers!
Figure 9-4: Determination of Black/White Wage Ratio in the Labour Market

If the black-white wage ratio is very high, no firm in the labour market will want to hire blacks. As the black-white wage ratio falls, more and more firms are compensated for their disutility and the demand for black workers rises. The equilibrium black-white wage ratio is given by the intersection of supply and demand, and equals \( \left( \frac{w_B}{w_W} \right)^* \). If some firms prefer to hire blacks, they would be willing to hire blacks even if the black-white wage ratio exceeds 1, shifting the demand curve up to \( D' \). If the supply of blacks is sufficiently small, it is then possible for the black-white wage ratio to exceed 1. Minority workers may benefit from ‘enclave economies’.

Employer discrimination ctd.

- Some criticisms/shortcomings of the employer taste model of discrimination:
  - Most large firms have divorced ownership from control, i.e. the model assigns discriminatory tastes to personnel department practices rather than individual bosses.
  - The model does not explain where discrimination comes from! Only some of the symptoms, but not the root causes, of discrimination are addressed.
  - It addresses wage discrimination, but employment discrimination may be the more important result of prejudice!
    - Employers offer a structured hierarchy of jobs and put some types of workers into a low level with low pay, despite them being as productive as other workers in higher levels of the hierarchy.
9-4 Employee Discrimination

• Assume: Whites do not like working with blacks (but blacks do not mind working with whites); whites and blacks are perfect substitutes in production.
• Whites act as if their $w_W$ is equal to $w_W(1-d)$.
• Assume a non-discriminatory (i.e. colour-blind) profit-maximising employer: The firm will NOT pay a compensating wage differential to whites. The firm will hire the cheapest workers (either blacks or whites) and pay them their MP!
  - The firm will employ either only blacks or only whites (completely segregated workforce).
  - Employee discrimination does not generate a wage differential between equally skilled black and white workers.
  - Employee discrimination does not affect the firm’s profitability. Market forces will NOT diminish this type of discrimination over time!

9-5 Customer Discrimination

• If ‘majority’ customers are prejudiced (i.e. discriminate against) ‘minority’ workers, their perceived price of a good sold by minority workers is utility-adjusted with the discrimination coefficient. They act as if $p$ equaled $p(1+d)$ and buy less of the good.
• Firms might get around this by putting ‘majority’ workers in customer contact jobs. Competition for ‘minority’ workers might then result in equal wages for equally productive majority and minority workers.
• When a firm cannot hide minority workers, customer discrimination can have an adverse impact on their wages: The firm has to charge a lower price for the good to compensate the prejudiced customers for their disutility. The minority workers have to compensate the firm for this by accepting a lower wage.
9-6 Statistical Discrimination

• This form of discrimination is based on treating an individual on the basis of membership in a group and knowledge of that group’s average characteristics.

• An individual is not seen as an individual, but as an ‘average person’ of the group s/he belongs to.

• It arises because an employer cannot perfectly predict the worker’s true productivity, and therefore also uses ‘group information’.
  - Example: Equally qualified etc. men and women apply for a job, but employer’s experience suggest many women leave work for child-bearing. Employer wants the worker to stay long-term and hires the male.
  - Many examples outside the labour market, e.g. in the insurance market.

Statistical discrimination ctd.

• A simple model of the impact of statistical discrimination on wages:
  - White and black applicants have their individual test scores $T$.
  - If the $T$s are perfectly correlated with people’s productivity, people would get offered a wage equal to their MPs.
  - Assume (realistically) that the $T$s are imperfect. In that case, the employer also wants to take into account the average $T$ (e.g. $\bar{T}$) for the group the worker belongs to so that the expected productivity is a weighted average of both:

$w = \alpha T + (1 - \alpha) \bar{T}$  \hspace{1cm} (9-4)

  - $\alpha$ measures the correlation between the individual test score and true productivity. Extreme cases: $\alpha = 1$ or $\alpha = 0$.
  - Figure 9-5.
The worker’s wage depends not only on his own test score, but also on the mean test score of workers in his racial group. (a) If black workers, on average, score lower than white workers, a white worker who gets $T^*$ points earns more than a black worker with the same score. (b) If both groups have the same mean test score but the test is a better predictor of productivity for white workers, high-scoring whites earn more than high-scoring blacks, and low-scoring whites earn less than low-scoring blacks.

**Statistical discrimination ctd.**

- **Figure 9-5b:**
  - The black worker’s wage is mostly set on the basis of the group average, the white worker’s wage is mostly set on the basis of his/her own test score.
  - Blacks that scored low on their individual test actually benefit from statistical discrimination (relative to high scoring blacks)!

- **Should** the employer use group averages (‘profiling’)?
  - Policy issue: Should there be ‘race or gender norming’ of test scores?
9-7 Experimental Evidence on Discrimination

- Very interesting material. Students read if interested!
- How to measure discrimination when it is illegal?
- Review of some studies using labour market experiments to test whether discrimination does exist.
  - Mail outs of fake resumes to test for discrimination because of a person’s name (names often reveal ethnic background).
  - Fake job applicants going to job interviews etc.

9-8 Measuring Discrimination

- One possible definition of discrimination: The difference in mean wages between various groups of people (the ‘raw’ wage differential). But this measure would likely be incorrect!
- More appropriate to compare the wages of equally skilled workers: Adjust the ‘raw’ wage differential for skill differences.
- Economists try to do this by estimating earnings regressions.
  - Assume two groups of workers (e.g. males and females) and decompose the raw wage differential (see equation 9-7).
- Oaxaca Decomposition – a decomposition of the raw wage differential into a portion related to skill differences and a portion related to labour market discrimination (see eq. 9-8).
  - The intuition of this decomposition is shown in Figure 9-6.
The average woman has $s_F$ years of schooling and earns $w_F$ dollars. The average man has $s_M$ years of schooling and earns $w_M$ dollars. Part of the wage differential arises because men have more schooling than women. If the average woman was paid as if she were a man, she would earn $w^*_F$ dollars. A measure of discrimination is then given by $(w^*_F - w_F)$.

**Figure 9-6: Measuring the Impact of Discrimination on the Wage**

**Measuring discrimination ctd.**

- **Does the Oaxaca Decomposition really measure discrimination?**
  - Depends on whether all dimensions of the skill differences between groups have been measured and controlled for.
  - That is unlikely (e.g. quality of education, motivation, drive?). The results of the decomposition can therefore always be criticized.
    - This is an easy argument for people who do not think that there is discrimination!
  - But why do quality of education, motivation & drive differ? If they differ due to discrimination (not by the employer, but by ‘society’), they should NOT be controlled for in the decomposition!
9-11 Policy Application: Determinants of the Female-Male Wage Ratio

- Table 9-6: “Discrimination in the Oaxaca sense” accounts for most of the wage gap between men and women. But this does not take into account that on average, women spend a smaller proportion of their potential work years in work.

- The Mincer-Polachek hypothesis (see footnote 39):
  1. Human capital (HC) is more profitable the longer the payoff period. HC acquired by men has longer pay-off periods. Women take time-off (e.g. because of children). Women have shorter HC pay-off periods and therefore acquire less HC.
  2. Women’s HC depreciates during their breaks from working life.

- Is this HC story correct? Problem of causation: Does women’s lower work attachment lead to less HC acquisition and lower wages, OR do lower wages for women (possibly due to discrimination) lead to weaker work attachment?

Determinants of the Male-Female Wage Ratio ctd.

- **Occupational crowding**: The occupational segregation between men and women in the labour market (see Table 9-7).

- The **occupational crowding hypothesis** is a discrimination-based explanation of the segregation of women into particular occupations where the return to education is lower (i.e. ‘female jobs’ tend to pay lower wages).

  The hypothesis assumes that the observed segregation of men and women into particular types of jobs is **intentional** (due to ‘society’ or ‘social climate’, not necessarily due to male employers!)
Determinants of the Male-Female Wage Ratio ctd.

• But the human capital model provides an alternative explanation of occupational crowding: Women are better off if they enter occupations in which their skills do not deteriorate during the years they spend in the household sector. This maximizes their lifetime earnings!

• Affirmative action programs (p. 405).

• Comparable worth programs – these break the link between wages and labour market conditions. Demand & supply effects no longer apply. Jobs are evaluated and rated (‘job scores’), e.g. ‘mechanic’ (men’s job) = ‘receptionist’ (women’s job).

  Can have large impact on female-male wage ratio at the cost of economic efficiency.

9-12 The Economics of Specialisation: Household Production

• The neoclassical labour-leisure choice model is very flexible and adaptable! It can be used to analyze household production by including many forms of nonmarket work, including work around the home, under the category ‘leisure’.

• Why do some household members specialize in the market sector and other members specialize in the household sector?
  - Allocation of time to various activities (paid work, household work, leisure time etc.) varies by gender and marital status.
  - For example, women usually allocate many more hours to the nonmarket sector than men. Classic example: difference in time spent doing housework.
• Consider Jack and Jill, a married couple (a two-person household).

• Let’s adapt our diagram: Assume they want to maximize their utility by consuming both goods bought in the market (market goods) and goods produced in the household (HH goods).

• Assume they each have a total of 10 hours per day for paid and non-paid work. How will they allocate their time between the two activities?

• “The household production function tells us how much household output Jack and Jill can generate for any given allocation of time.”

• The textbook makes the somewhat sexist assumption that Jill is more productive in terms of household production, i.e. she is assumed to produce more $ worth of output in household production per hour than Jack ($25 versus $10 worth of HH output per hour).

• Assume Jack’s (market) wage rate is $20 per hour, Jill’s is $15 per hour.

• We can draw their individual and combined budget lines (Figure 9-12).

• Their household opportunity set is greater than when Jack and Jill were not married (since each can now specialize in the sector where they are relatively more productive).
Figure 9-12a&b: Jack and Jill – Unmarried Opportunity Sets

Market Goods ($)  
200  
100  
0
Household Goods ($)  
250  
150  
100

Figure 9-12c: Budget Lines and Opportunity Frontier of Married Couple

At point $E$, Jack and Jill allocate all their time to the household sector. If they wish to buy market goods, Jack gets a job because he is relatively more productive in the labour market, generating segment $FE$ of the opportunity frontier. After he uses up all his time in the labour market, Jill then gets a job, generating segment $GF$ of the frontier.
Figure 9-13: Which Point on the Opportunity Frontier will the Household choose, or Who Works Where?

Division of Labour in the Household

- The Household will choose the point that gets it on the highest indifference curve. Three possible solutions:
  - (a) The indifference curve $U$ is tangent to the opportunity frontier at point $P$. Jill specializes in the household sector and Jack divides his time between the labour market and the household.
  - (b) Jack specializes in the labour market and Jill divides her time between the labour market and the household.
  - (c) Jack specializes in the labour market and Jill specializes in the household sector.
• “Higher wage rates create incentives for specializing in the market sector!”
• “Greater aptitude for producing output in the household sector creates incentives for specializing in that sector!”
  - See Borjas, p. 411, Figure 9-14 (not shown in class).
• But: Changes in developed countries in recent decades:
  - Increase in women’s real wage means that it is more common that women earn as much or more than men (although on average they still earn less).
  - Plus: Technological changes in household production imply that productivity differences between men and women have declined.
• Result: Tendency for more men to stay at home and specialize in HH production.

End of Chapter 9