

CHAPTER **19**

Earnings and Discrimination

PRINCIPLES OF
Economics
N. Gregory Mankiw

Premium PowerPoint Slides
by Ron Cronovich
Modified by Joseph Tao-yi Wang

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In this chapter, look for the answers to these questions:

- How do wages compensate for differences in job characteristics?
- Why do people with more education earn higher wages?
- Why are wages sometimes above their equilibrium values?
- Why is it difficult to measure discrimination?
- When might the market solve the problem of discrimination? When might it not?

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U.S. Median Weekly Earnings, Selected Occupations, 2008

Occupation	Both sexes	Men	Women	Gender gap
Chief executives	\$1,903	\$1,999	\$1,603	24.7%
Lawyers	1,751	1,875	1,509	24.3%
Physicians, surgeons	1,731	1,911	1,230	55.4%
Architects & engineers	1,244	1,286	1,001	28.5%
Management	1,204	1,384	979	41.4%
Registered nurses	1,022	1,168	1,011	15.5%
High school teachers	949	995	920	8.2%
Counselors	787	787	787	0%
Retail salespersons	521	623	440	41.6%
Waiters/waitresses	391	436	367	18.8%
All occupations	\$722	\$798	\$638	25.1%

T.W. Average Monthly Earnings, Selected Occupations, 2009

Occupation	# of men	# of women	men	women	gender gap
銀行業	56,510	80,150	\$88,596	\$71,431	24.0%
電子零組件製造業	234,305	264,839	52,918	37,218	42.2%
電力供應業	20,850	2,544	105,303	86,885	21.2%
航空運輸業	8,112	7,748	96,320	56,493	70.5%
醫療保健社工服務業	63,630	264,016	91,203	45,124	102.1%
會計服務業	6,734	14,390	68,503	48,573	41.0%
法律服務業	3,054	5,877	44,658	44,383	0.6%
廣告業及市場研究業	11,840	15,749	43,791	45,980	-4.8%
保全及私家偵探服務業	62,249	8,369	30,725	36,388	-15.6%
理容美髮業	2,212	26,999	27,415	24,698	11.0%
餐館業	72,125	107,126	25,201	22,941	9.9%

Introduction

- In competitive markets, the wages workers earn equal the value of their marginal products.
- There are many factors that affect productivity and wages...

Compensating Differentials

- Compensating differential:** a difference in wages that arises to offset the nonmonetary characteristics of different jobs
- These characteristics include unpleasantness, difficulty, safety. Examples:
 - Coal miners and fire fighters are paid more than other workers with similar education to compensate them for the extra risks.
 - Night shift workers are paid more than day shift to compensate for the lifestyle disruption of working at night.

Ability, Effort, and Chance

- Greater ability or effort often command higher pay. These traits increase workers' marginal products, make them more valuable to the firm.
- Wages also affected by chance
 - *E.g.*, new discoveries no one could have predicted make some occupations obsolete, increase demand in others

EARNINGS AND DISCRIMINATION

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Ability, Effort, and Chance

- Ability, effort, and chance are difficult to measure, so it is hard to quantify their effects on wages.
- They are probably important, though, since easily measurable characteristics (education, age, etc.) account for less than half of the variation in wages in our economy.

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Case Study: The Benefits of Beauty

Research by Hamermesh and Biddle:

- People deemed more attractive than average earn 5% more than people of average looks.
- Average-looking people earn 5-10% more than below-average looking people.

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Case Study: The Benefits of Beauty

Hypotheses:

1. Good looks matter for productivity
 - In jobs where appearance is important, attractive workers are more valuable to the firm, command higher pay.
2. Good looks indirectly related to ability
 - People who make an effort to project attractive appearance may be smarter or more competent in other ways.
3. Discrimination

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Case Study: The Benefits of Beauty

For Taiwanese female college graduates, Mei-Hsuan Chen (2009) shows that:

1. Height/weight related to self-confidence in college
 - Being higher and skinnier makes you more confident about yourself
2. Self-confidence (during college) increases initial salary by \$1,1xx, while height increases it by \$5x/cm and weight decreases it by \$5x/kg
3. Consistent with the story that "good looks indirectly related to ability (self-confidence)"

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The Superstar Phenomenon

- Superstars like Chih-Ling Lin, F4 earn many times more than average in their fields.
- The best plumbers or carpenters do not.
- Superstars arise in markets that have two characteristics:
 - Every customer in the market wants to enjoy the good supplied by the best producer.
 - The good is produced with a technology that allows the best producer to supply every customer at a low cost.

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Human Capital

- **Human capital:** the accumulation of investments in people, such as education and on-the-job training
- Human capital affects productivity, and thus labor demand and wages.

Weekly Earnings of Full-Time Employed Persons Age 25+ by Education, 2009:Q2

Educational attainment	Median weekly earnings
Less than H.S.	\$ 448
H.S. diploma	621
Some college or Associate degree	720
Bachelor's degree	1,026
Advanced degree	1,336

Weekly Earnings of Full-Time Employed Persons Age 25+ by Education, 2009:Q2

Educational attainment	Median weekly earnings	TAIWAN average (\$1=NT\$30)
P. S. and below	\$ 448	\$ 63
Mid. school (vocal.)		151
S. vocational school		215
H.S. diploma	621	212
Associate/Some col.	720	317
Bachelor's degree	1,026	406
Advanced degree	1,336	

The Increasing Value of Skills



The earnings gap between college-educated and non-college-educated workers has widened in recent decades.

Percentage difference in annual earnings for college graduates vs. high school diploma		
	1980	2005
Men	44%	87%
Women	35%	72%

The Increasing Value of Skills



Taiwan also has an earnings gap between college-educated and non-college-educated workers.

Percentage difference in annual earnings for advance degrees in Taiwan (2009)		
	Associate	≥ Bachelor
vs. High S.	19%	40%
vs. J. High	42%	66%

The Increasing Value of Skills

Two hypotheses:

1. *International trade*
Rising exports of goods made with skilled labor, rising imports of goods made with unskilled labor.
2. *Skill-biased technological change*
New technologies have increased demand for skilled workers, reduced demand for unskilled workers.

Difficult to determine which hypothesis better explains the widening earnings gap; probably both are important.

ACTIVE LEARNING 1A

Discussion question

Suppose you were offered this choice:

- A. Spend 4 years studying at the world's best university, but must keep your attendance there a secret.
- B. Get an official degree from the world's best university, but cannot actually study there.

Which do you think would enhance your future earnings more?

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The Signaling Theory of Education

An alternative view of education:

- Firms use education level to sort between high-ability and low-ability workers.
- The difficulty of earning a college degree demonstrates to prospective employers that college graduates are highly capable.
- Yet, the education itself has no impact on productivity or skills.
- Policy implication: Increasing general educational attainment would not affect wages.

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What Course Are You Taking?

Your GPA serves two purposes:

- Signal you are a smart and responsible student
- Reflect the knowledge and abilities you accumulated in college

But what does "sweet and cheap GE" indicate?

- What if I get 60 in a tough course? Is that worse than taking easy sweet and cheap's?
- Next year, should you take the "road to heaven" or the "deadly triangle"? (cf. NTUCourse on p1)

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Some Personal Recommendations

- In your 2nd year, take:
 - Intermediate Micro (w/ Game) by 古慧雯 or 黃貞穎
 - Statistics (w/ Econometrics) by 陳旭昇 + 駱明慶
- In your 3rd and 4th year, take:
 - Econometrics (required by most US schools)
 - Try one of Micro, Macro or Econometric Theory
 - Master-level electives (駱明慶, 陳虹如, 李怡庭, ...)
 - Former master level courses
 - English Composition (2 yr) or other languages
- Apply for exchange programs such as BESAP

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Some Personal Recommendations

- Find your interest:
 - Take electives broadly
 - Try Summer interns (industry) or RAs (academics)
- Then focus on ONE field to sharpen your skills
 - Use tough core courses required by other majors to establish your "secret weapon (吃飯的傢伙)"
- Develop **General Skills** as well:
 - Logical Reasoning (E.C. or A.C.)
 - Communication (writing and oral presentation)
 - Programming Skills

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Some Personal Recommendations

- Interested in micro-economics?
 - Master Intermediate Micro and take micro theory I
- Like the experiments I run?
 - Signup for more experiments at TASSEL lab
 - Take my class in experimental economics
 - Start to do research with me now!
- If you want to apply for graduate school in Econ:
 - Take Advanced Calculus, Advanced Statistical Inference and Linear Algebra fr NTU Math
 - Take 2 years of English Composition (I and II)
 - Start to do research now!

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Reasons for Above-Equilibrium Wages

1. Minimum wage laws

The minimum wage may exceed the eq'm wage of the least-skilled and experienced workers

2. Unions

Union: a worker association that bargains with employers over wages and working conditions

Unions use their market power to obtain higher wages; most union workers earn 10-20% more than similar nonunion workers.

Reasons for Above-Equilibrium Wages

3. Efficiency wages

Efficiency wages: above-equilibrium wages paid by firms to increase worker productivity

Firms may pay higher wages to reduce turnover, increase worker effort, or attract higher-quality job applicants.

ACTIVE LEARNING 2

Explaining wage differentials

In each case, identify which worker would earn more and explain why.

- A. The best physical therapist on the planet or the best writer on the planet
- B. A trucker that hauls produce or a trucker that hauls hazardous waste from nuclear power plants
- C. A graduate of NTU (台大) or an equally intelligent & capable graduate of NTUST (天大地大...)
- D. Someone who graduated from NTU with a 3.7 GPA, or someone who graduated from the same university with a 2.4 GPA

ACTIVE LEARNING 2

Answers

- A. The best physical therapist on the planet or the best writer on the planet
*The superstar phenomenon:
The best writer can service many more customers than the best physical therapist.*
- B. A trucker that hauls produce or a trucker that hauls hazardous waste from nuclear power plants
*Compensating differentials:
The hazardous waste hauler earns more to compensate for the higher risks.*

ACTIVE LEARNING 2

Answers

- C. A graduate of NTU (台大) or an equally intelligent & capable graduate of NTUST (天大地大...)
*The signaling theory of education:
Employers assume the NTU grad has more ability than NTUST grad.*
- D. Someone who graduated from NTU with a 3.7 GPA, or someone who graduated from the same university with a 2.4 GPA
*The human capital theory of education:
A higher GPA reflects greater learning, which leads to higher productivity and wages.*

The Economics of Discrimination

- **Discrimination:** the offering of different opportunities to similar individuals who differ only by race, ethnicity, gender, or other personal characteristics

Gender Discrimination of Taiwan



1. There is a (narrowing) earnings gap between female and male workers in Taiwan.
2. "什麼都漲，就是薪水不漲?" More true from men...

Wage Gender Gap of Taiwan (Total Yearly Income in NT dollars)			
	Male	Female	Diff.
2009	\$ 680,430	\$ 492,251	38%
2001	694,475	472,150	47%

Source: 民國98/90年家庭收支調查

Measuring Labor-Market Discrimination

- Median earnings of full-time U.S. workers, 2007:
 - White males earn 21% more than white females.
 - White males earn 24% more than black males.
- Taken at face value, these differences look like evidence that employers discriminate.
- But there are many possible explanations for wage differences besides discrimination; the data above do not control for differences in other factors that affect wages.

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Measuring Labor-Market Discrimination

Differences in human capital among groups:

- White males 75% more likely to have college degree than black males
- White males 11% more likely to have graduate degree than white females
- Women have less on-the-job experience than men
- Public schools in many predominantly black areas are of lower quality (e.g., funding, class sizes)

There may well be discrimination in access to education, but this problem occurs long before workers enter the labor force.

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Measuring Labor-Market Discrimination

Recent study by Bertrand and Mullainathan (AER 2004) finds evidence of labor-market discrimination:

- 5000 fake résumés sent in response to "help wanted" ads.
- Half had names more common among blacks, like Lakisha Washington or Jamal Jones. The other half had names common among whites, like Emily Walsh or Greg Baker. Otherwise, the résumés were the same.
- The white names received 50% more calls from interested employers than the black names.

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Discrimination by Employers

- Competitive markets provide a natural remedy for employer discrimination:

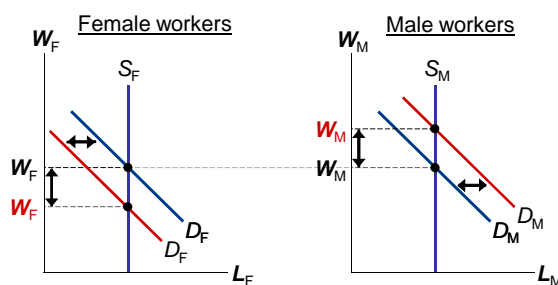
The profit motive...

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Discrimination by Employers

Discriminating firms will have to raise wages to attract the best workers. The only way to do this is to raise wages to the level of non-discriminating firms. Result: A wage differential.



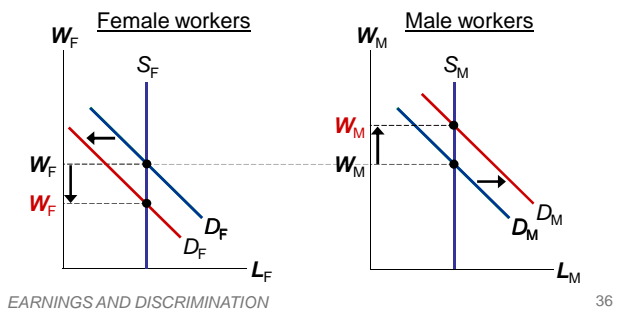
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Discrimination by Employers

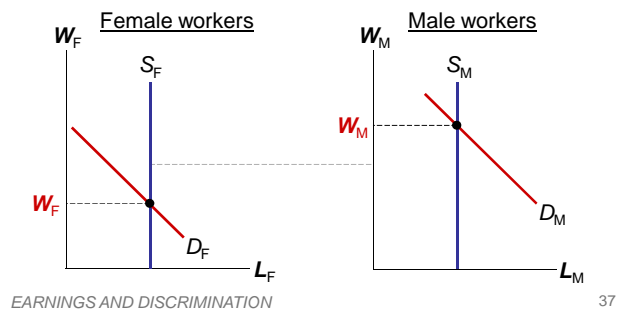
Suppose some firms discriminate against female workers. They will hire fewer females, more males.

Result: A wage differential.



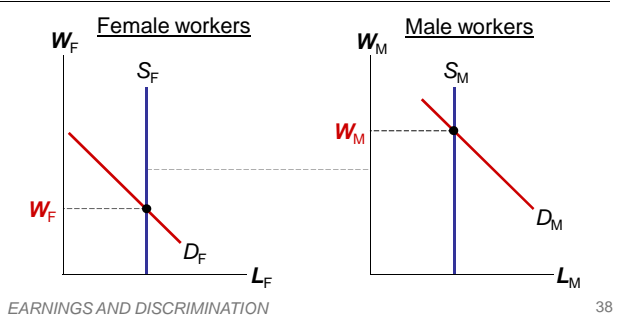
Discrimination by Employers

The non-discriminating firms can hire females for a lower wage, giving them a cost advantage and economic profits, which attract entry of other non-discriminating firms.



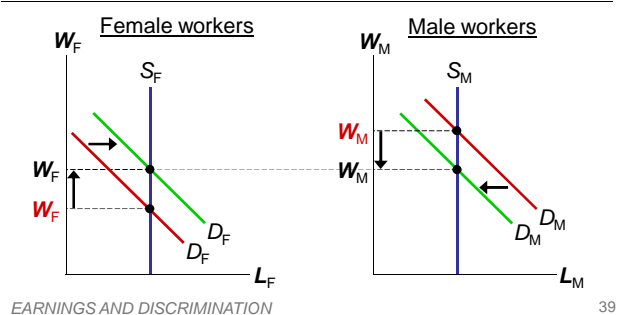
Discrimination by Employers

The discriminating firms will begin to lose money and be driven out of the market.



Discrimination by Employers

Result: Demand for female workers increases, demand for male workers falls until wages are equalized.



Discrimination by Consumers

- Discrimination by consumers may result in discriminatory wage differentials.
 - Suppose firms care only about maximizing profits, but customers prefer being served by whites.
 - Then firms have an incentive to hire white workers, even if non-whites are willing to work for lower wages.

Discrimination by Governments

- Some government policies mandate discriminatory practices.
 - apartheid in South Africa before 1994
 - early 20th century U.S. laws requiring segregation in buses and streetcars
- Such policies prevent the market from correcting discriminatory wage differentials.

CONCLUSION

- In competitive markets, workers are paid a wage that equals the value of their marginal products.
- Many factors affect the value of marginal products and equilibrium wages.
- The profit motive can correct discrimination by employers, but not discrimination by customers or discriminatory policies of governments.
- Even without discrimination, the distribution of income may not be equitable or desirable – a topic we explore in the following chapter.

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CHAPTER SUMMARY

- Other things equal, wage differences compensate workers for job attributes: The harder or less pleasant a job, the more a worker is compensated.
- Workers with more human capital are more productive and command higher wages than workers with less human capital.
- Workers with college degrees may get better job offers because the degree signals high natural ability to employers.

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CHAPTER SUMMARY

- Wages also may differ with natural ability, effort, and chance.
- Wages are sometimes above their equilibrium levels, due to minimum wage laws, the market power of labor unions, and efficiency wages.
- Some differences in earnings are due to discrimination on the basis of race or other characteristics. Measuring the amount of discrimination is difficult, though.

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CHAPTER SUMMARY

- The profit motive tends to limit the impact of employer discrimination on wages.
- Discrimination by consumers or governments may lead to persisting wage differentials.

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Earning and Discrimination

- Benchmark (Ch.18): $W=VMPL$
- Other reasons for wage differentials:
 - Job Characteristics: Difficulty, Risk, Superstar
 - Personal Traits: Ability, Effort, Chance, etc.
 - Education: Human Capital vs. Signaling
- Discrimination (and possible cures)
- Homework: Mankiw, Ch.19, pp. 430-431, Problems 1, 3, 6, 7, 8, 9