

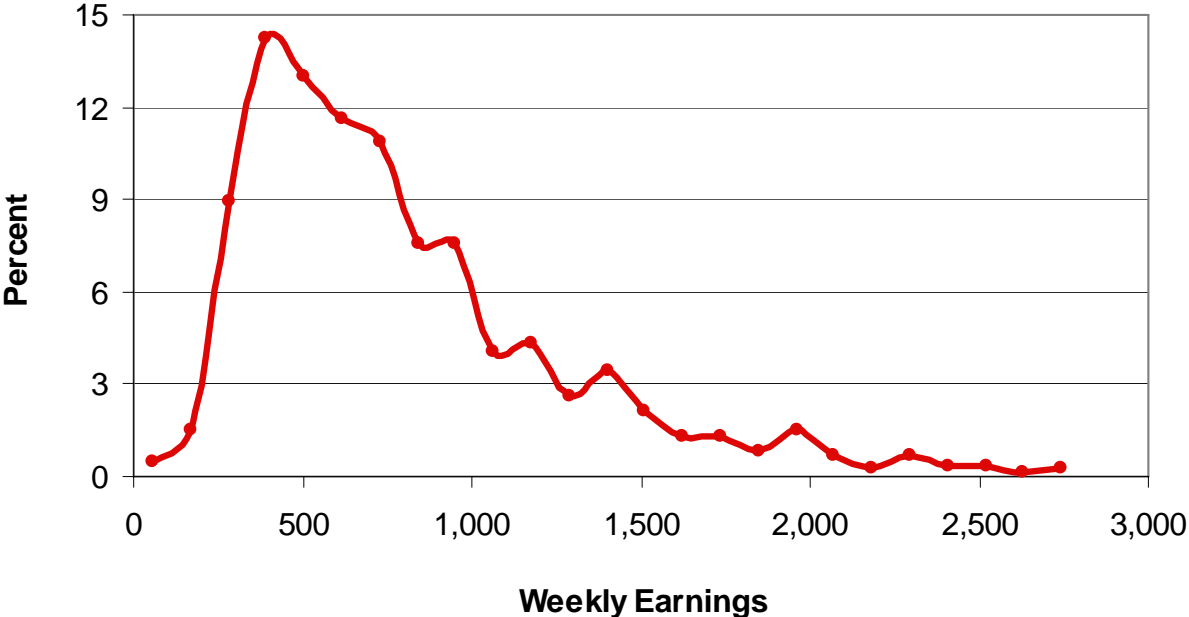
## Wage Structure

- Some workers will typically command much higher earnings than others.
- The observed wage inequality reflects two “fundamentals” of the labor market.
- First, there exist productivity differences among workers such as difference in educational attainment or innate ability etc → difference in individuals.
- Second, the rate of return to skills will vary among labor markets and over time, responding to changes in the supply and demand for skills → difference in market.

## Earnings Distribution

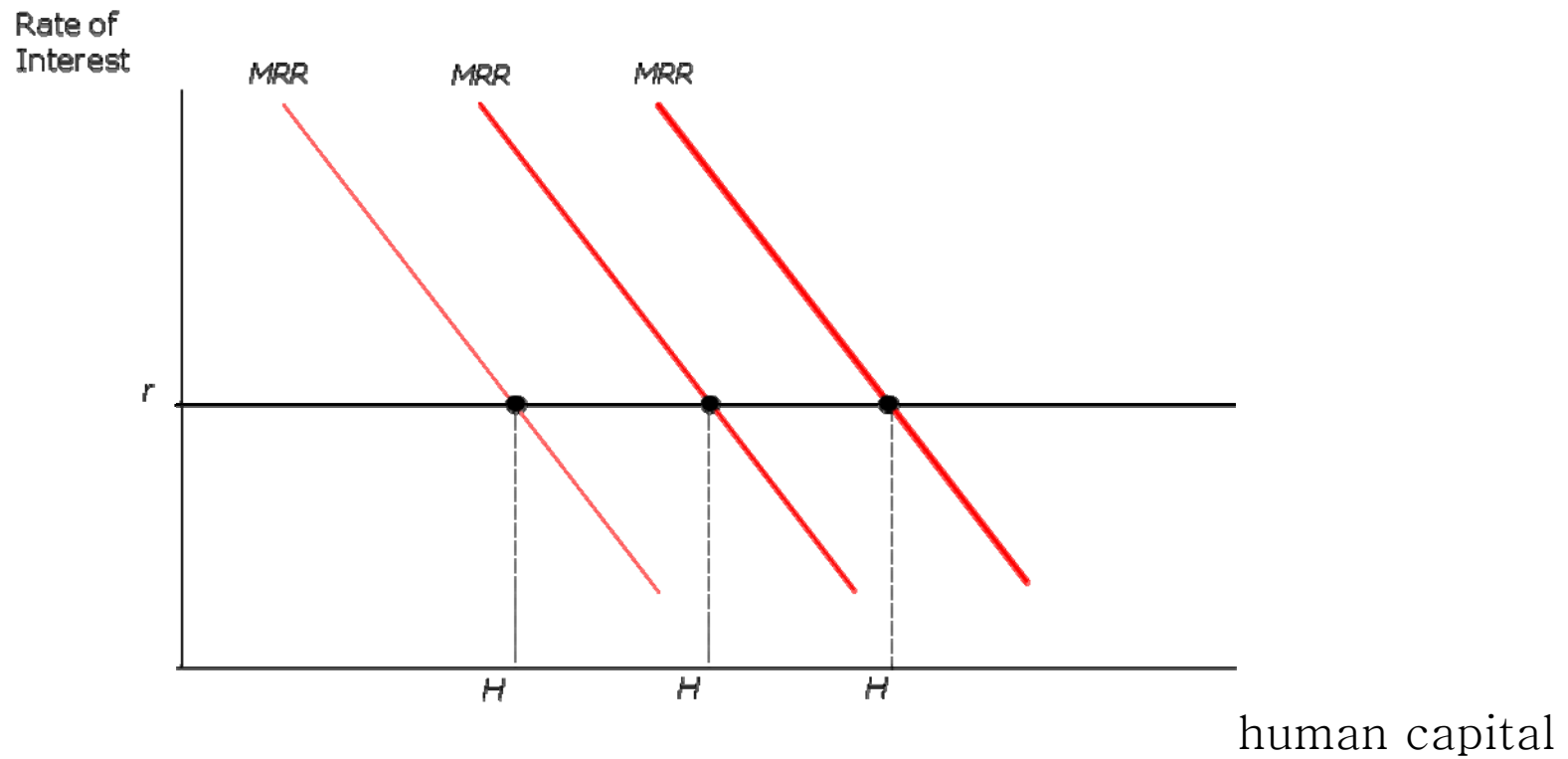
- This chapter examines the factors that determine the shape of the wage distribution.
- The wage distribution is positively skewed → A long right tail.
- A small percent of workers earn disproportionately large shares of the rewards for work.

[Figure 1] The Wage Distribution in the United States, 2006



- There are sizable differences in the income distribution across countries.
- Many studies of the shape of the wage distribution use the human capital model as a point of departure.
- Human capital investments that vary from worker to worker.
- Young workers are still accumulating human capital, while older workers are collecting returns from earlier investments.
- There is a positive correlation between ability and human capital investments, which “stretches out” wages in the population.

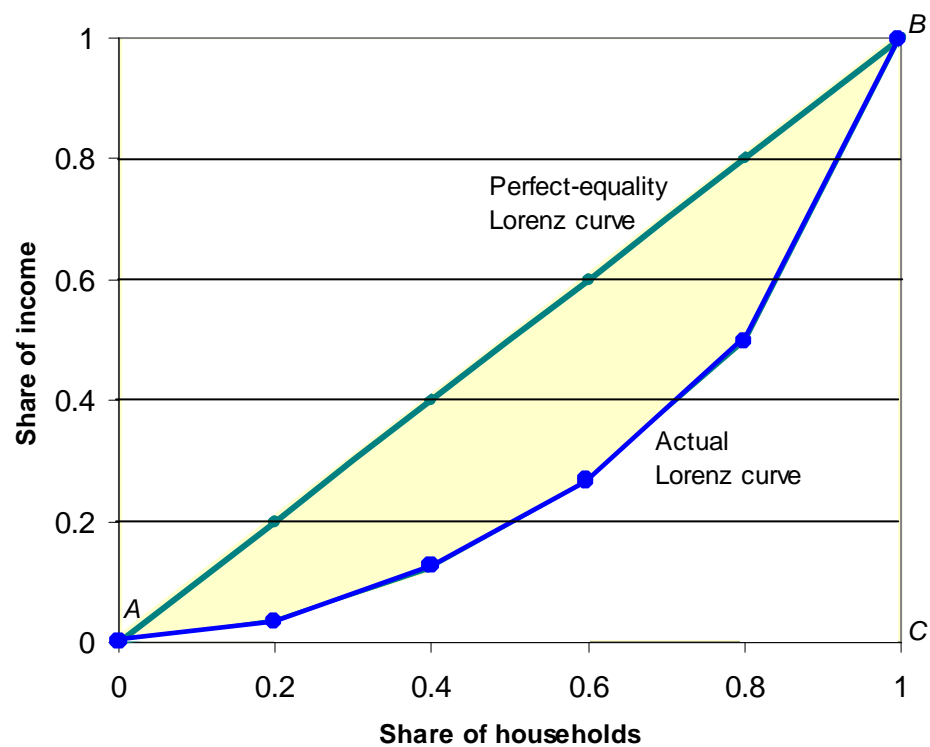
[Figure 2] Income Distribution When Workers Differ in Ability



- High-ability workers have higher wages than low-ability workers for two distinct reasons.
- First, high-ability workers earn more because they acquire more human capital than less able workers → difference in human capital generates wage differentials among workers.
- Second, high-ability workers would earn more than low-ability workers even if both groups acquired the same amount of human capital → ability itself is a characteristic that increases productivity and earnings.
- The positive correlation between ability and human investment generates a positively skewed wage distribution.

## Measuring Inequality

[Figure 3] The Lorenz Curve and the Gini Coefficient





- The perfect–equality Lorenz curve is given by the line AB, indicating that each quintile of households gets 20 percent of aggregate income.
- The actual Lorenz curve describes the actual income distribution.
- The ratio of the shaded area to the area in the triangle ABC gives the Gini coefficient.
- The Gini coefficient increases as inequality increases.
- Summarizes the entire income distribution with a single number between 0 (perfect equality) and 1 (perfect inequality).

[Table 1] The Distribution of Income by Quintile, US Census (2001)

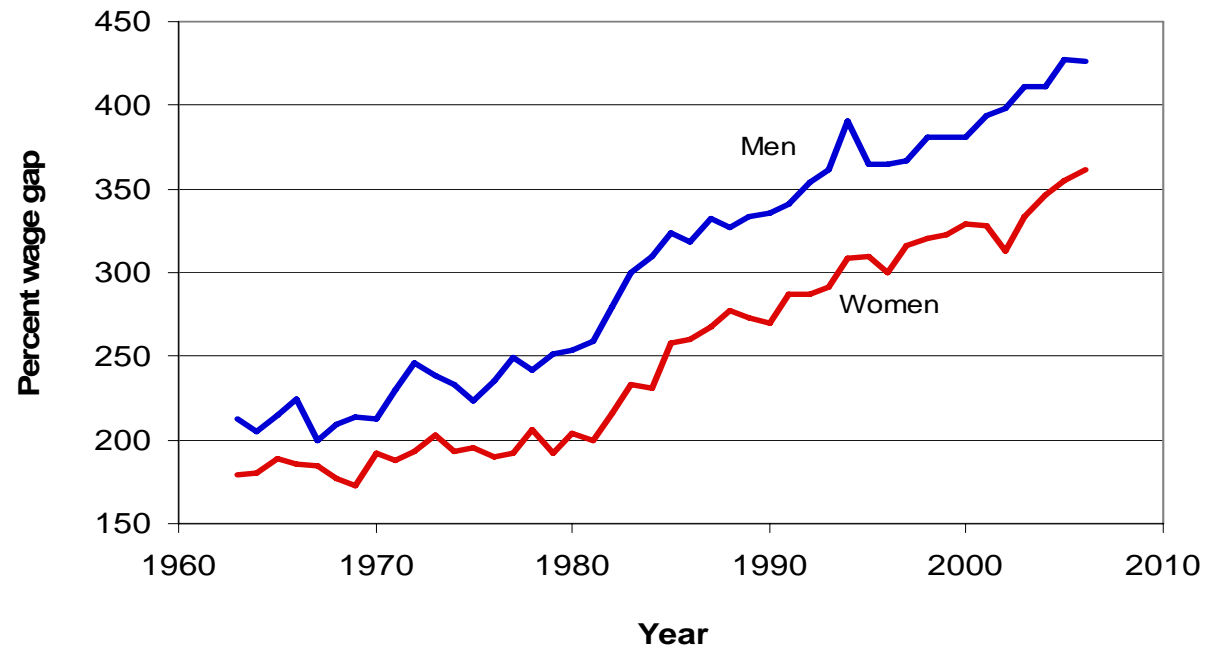
Quintile	Share of Income	Cumulative Share of income
1	0.035	0.035
2	0.087	0.122
3	0.146	0.268
4	0.230	0.498
5	0.502	1.000

- An alternative measure of wage differentials is wage gaps.
- Wage gaps provide wage ratios between different percentiles in the distribution (sometimes controlling for observed characteristics).
- The 90–10 Wage Gap =  $90^{\text{th}}$  percentile wage  $\div$   $10^{\text{th}}$  percentile wage.
- The 50–10 Wage Gap =  $50^{\text{th}}$  percentile wage  $\div$   $10^{\text{th}}$  percentile wage.

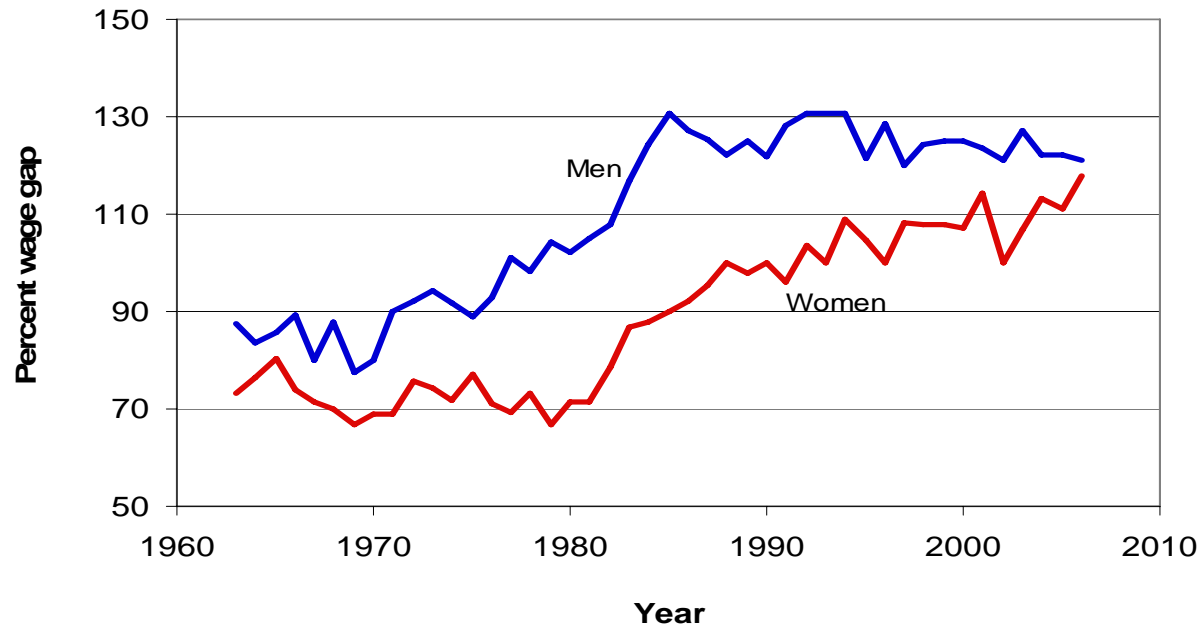
## Changes in the Wage Structure during 1980s

- The wage gap between those at the top of the wage distribution and those at the bottom widened dramatically.
- Wage differentials widened among education groups, experience groups, and age groups.
- Wage differentials widened within demographic and skill groups. In other words, the wages of workers of the same education, age, sex, occupation, and industry were much more dispersed in the mid-1990s than they were in the late 1970s.

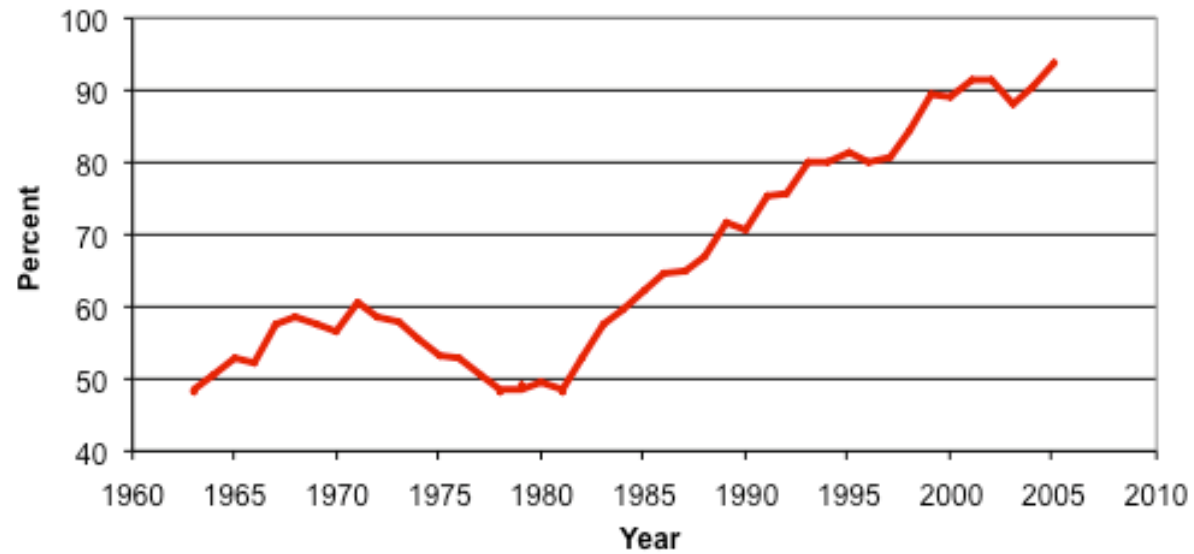
[Figure 4] Earnings Inequality for Full-Time, Year-Round Workers,  
1963–2006: The 90–10 Wage Gap



[Figure 5] Earnings Inequality for Full-Time, Year-Round Workers,  
1963–2006: The 50–10 Wage Gap



[Figure 6] Wage Differential between College Graduates and High School Graduates, 1963–2006

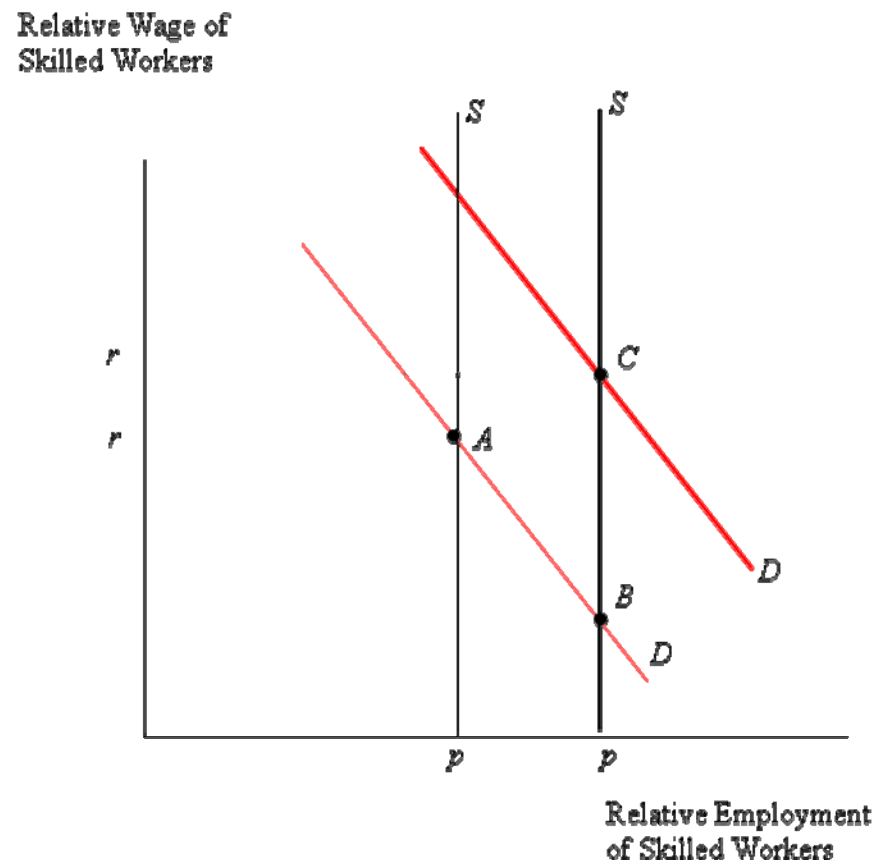


## Why Did Wage Inequality Increase?

- No single factor explains the changes.
- The increase in inequality seems to be caused by concurrent changes in economic “fundamentals” and labor market institutions.
- Demand for skilled workers increased relatively more than demand increased for unskilled workers.
- Increased physical capital helped to increase the productivity of skilled workers → A decrease in the supply of skilled workers or an increase in the demand for skilled workers could cause a widening of the wage gap.



[Figure 7] Changes in the Wage Structure Resulting from Shifts in Supply and Demand  
and Demand



- The downward-sloping demand curve implies that employers wish to hire relatively fewer skilled workers when the relative wage of skilled workers is high.
- The perfectly inelastic supply curve,  $S_0$ , indicates that the relative number of skilled workers is fixed.
- Initially, the labor market is in equilibrium at point  $A$ . Suppose the relative supply of skilled workers increases to  $S_1$ .
- The rising relative wage of skilled workers can then be explained only if there was a sizable outward shift in relative demand from  $D_0$  to  $D_1$  (ending at point  $C$ ).

## Possible Explanations about increase in wage inequality

### Supply shifts

- It is suspected that the labor market entry of the baby boom cohort in the 1970s shifted out the supply curve of college graduates, a decline in the relative wage of skilled workers between 1970 and 1979.
- However, it is impossible to explain the increase in the wage gap between college and high school graduates in the 1980s and 1990s without resorting to a story where shifts in the relative demand curve play the dominant role.

## International trade

- The workers in the exporting industries tend to be well educated while the workers in the importing industries tend to be less educated.
- The globalization of the U.S. economy (rising exports and even more rapidly rising imports) would then have a beneficial impact on the demand for skilled workers, and an adverse impact on the demand for less skilled workers.

## Skill-based technological change

- If technological advances are good substitutes for unskilled workers and complement the skills of highly educated workers, this type of technological change would lower the demand for unskilled labor and increase the demand for skilled labor.
- For instance, the rapid introduction of the personal computer into the workplace may have an important impact on the wage structure.

Institutional changes in the U.S. labor market

- Unions or Minimum Wage