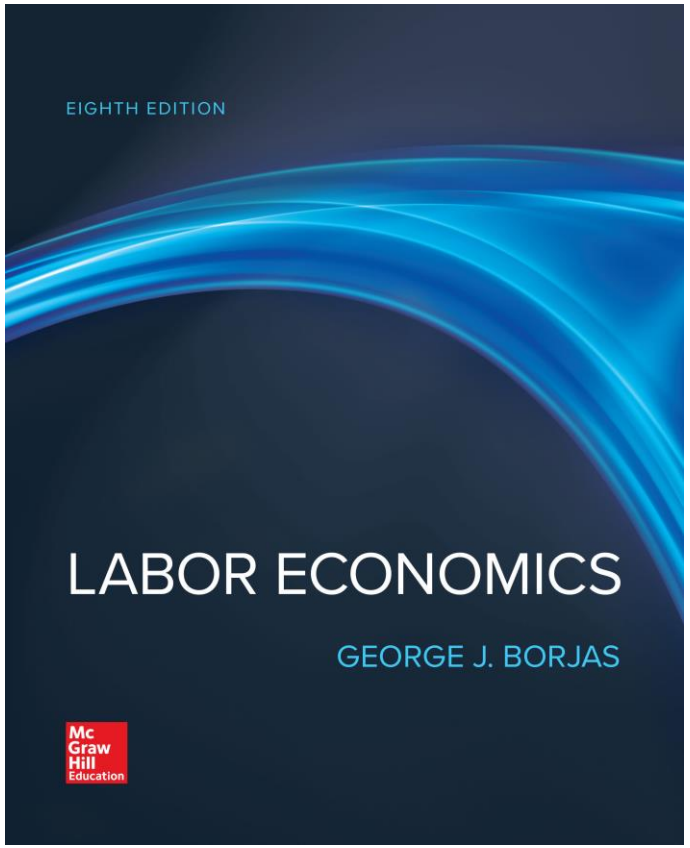
Chapter 7

The Wage Structure



"What makes equality such a difficult business is that we only want it with our superiors."
-Henry Becque

Introduction

Some workers will earn more than others.

- Productivity differences.
- Rate of return to skills differs.

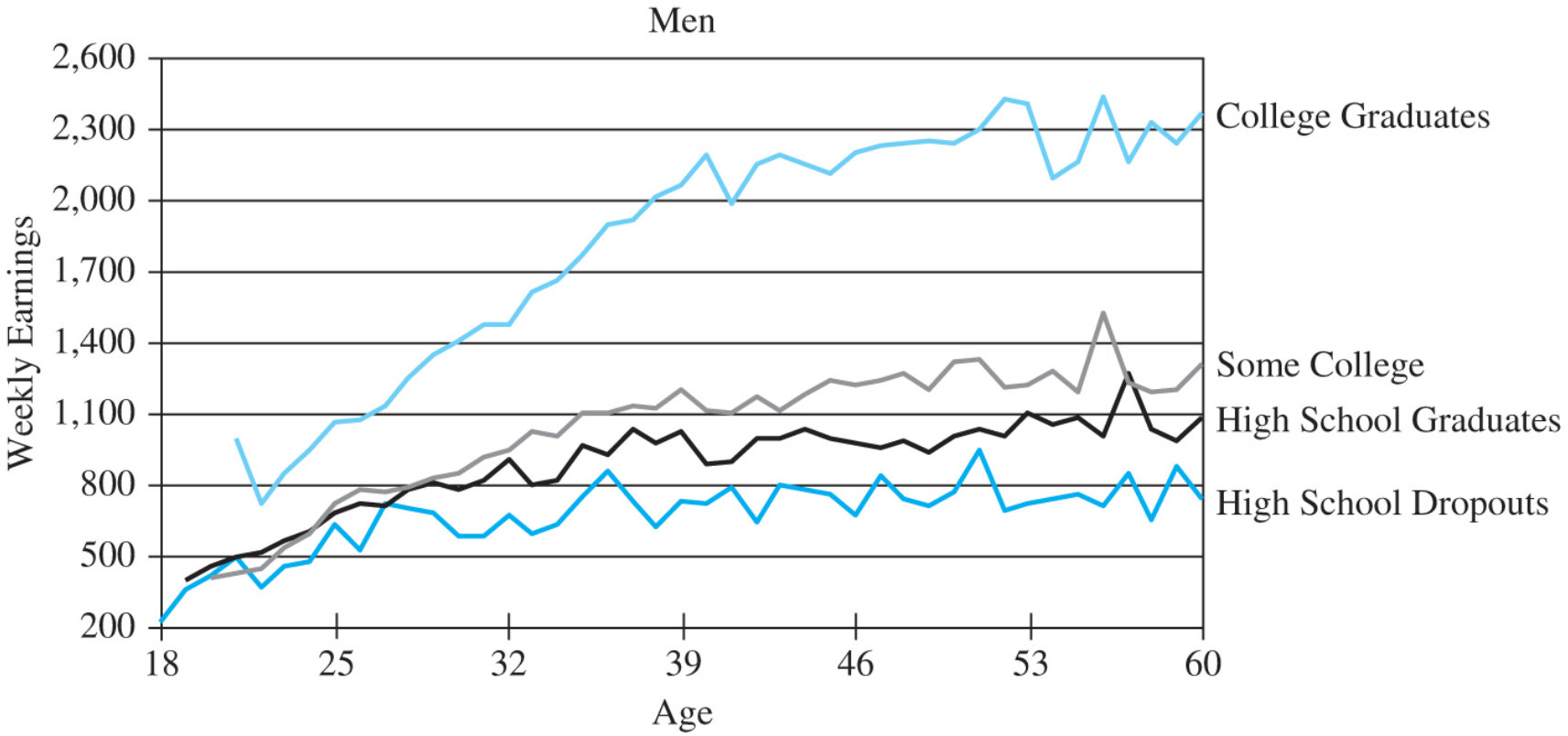
This chapter considers the factors that contribute to the shape of the wage distribution.

Post-School Human Capital Investments

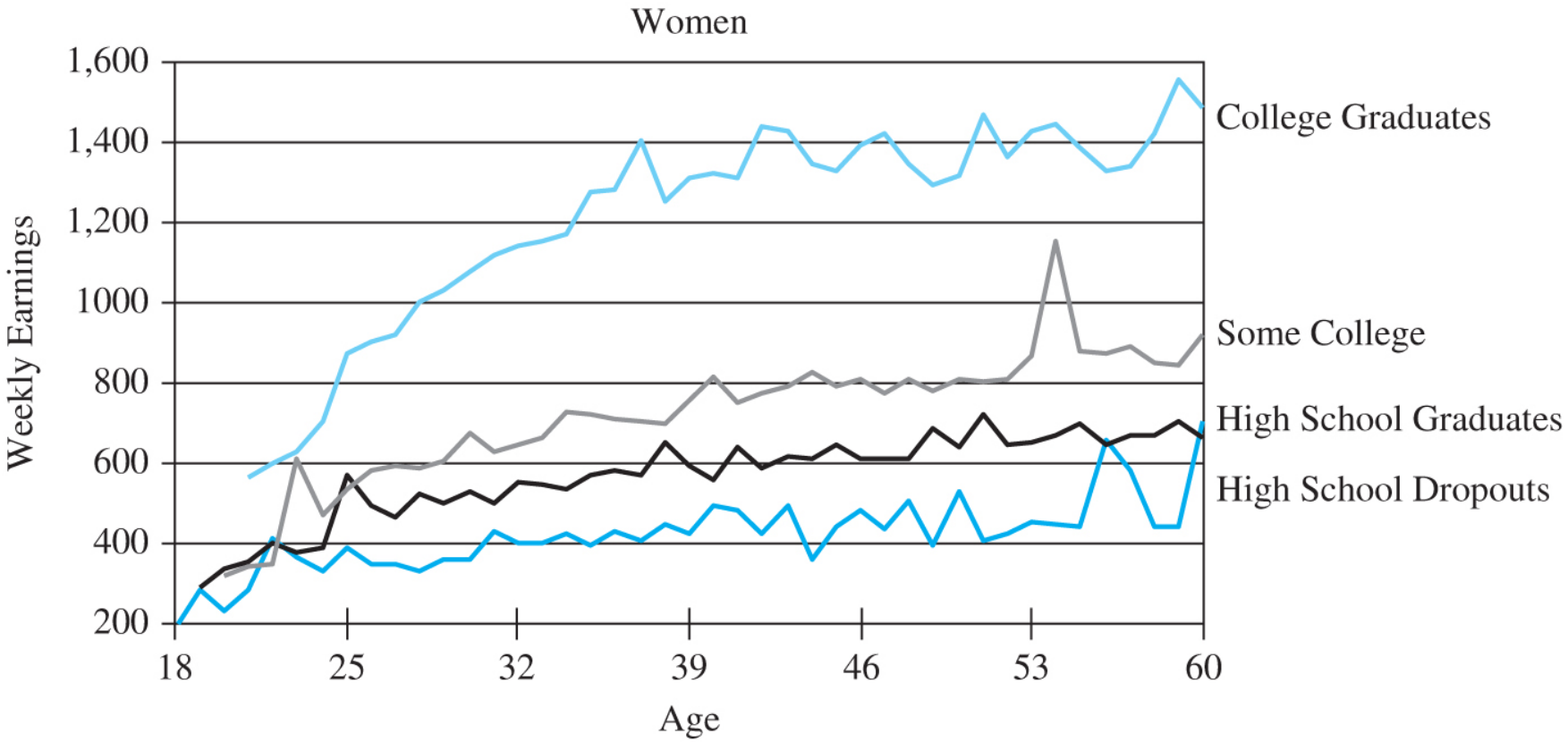
Three important properties of age-earnings profiles:

- Highly educated workers earn more than less educated workers.
- Earnings rise over time at a decreasing rate.
- The age-earnings profiles of different education cohorts diverge over time (they "fan outward").
- Earnings increase faster for more educated workers.

Age-Earnings Profiles



Age-Earnings Profiles



On-The-Job Training

Most workers augment their human capital stock through on-the-job training (OJT) after completing education investments.

Two types of OJT:

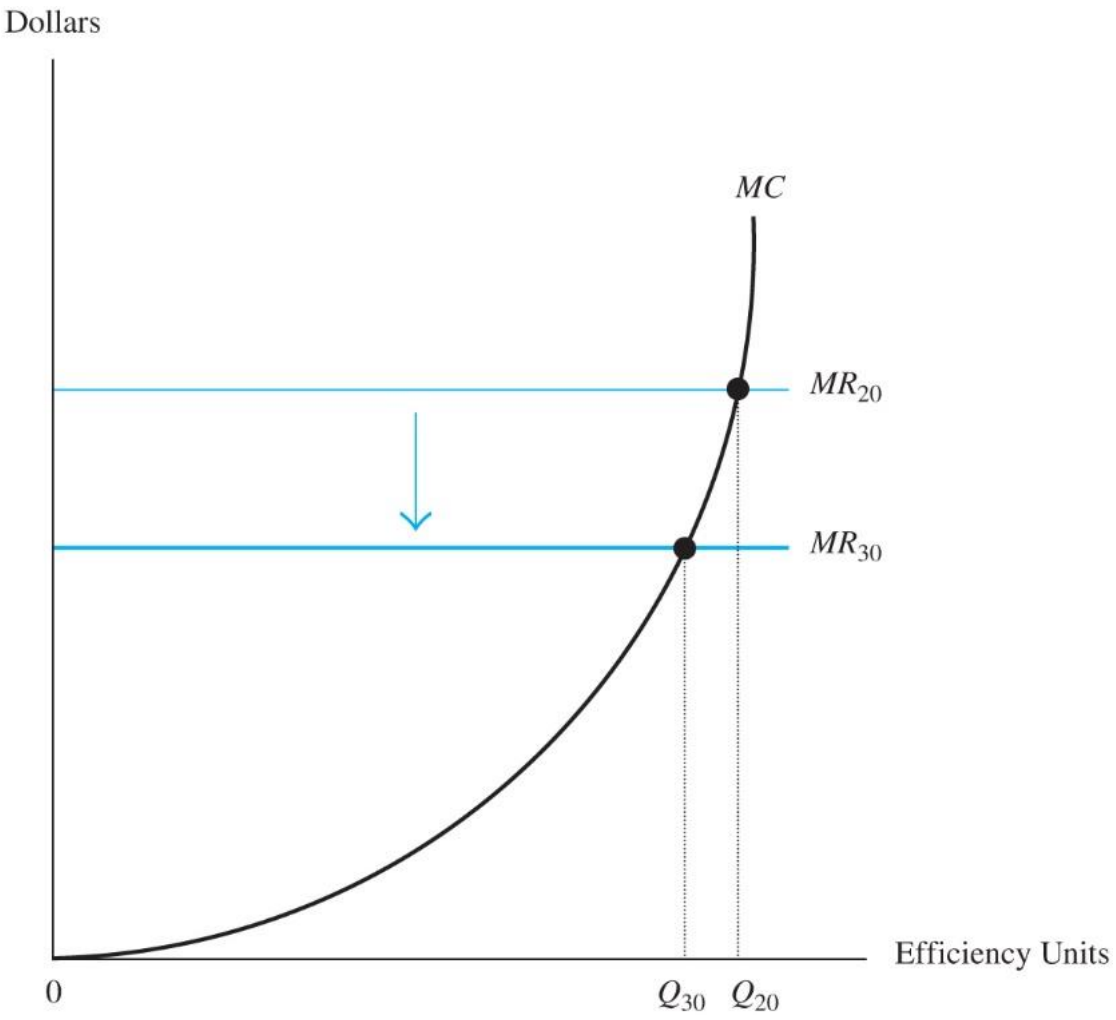
- General: training that is useful at all firms once it is acquired.
- Specific: training that is useful only at the firm where it is acquired.

Implications

Firms only provide general training if they do not pay the costs.

In order for the firm to willingly pay some of the costs of specific training, the firm must share in the returns to specific training. Engaging in specific training eliminates the possibility of the worker separating from the job in the post-training period.

The Acquisition of Human Capital Over the Life Cycle



The marginal revenue of an efficiency unit of human capital declines as the worker ages (so that MR_{20}, the marginal revenue of a unit acquired at age 20, lies above MR_{30}). At each age, the worker equates the marginal revenue with the marginal cost, so that more units are acquired when the worker is younger.

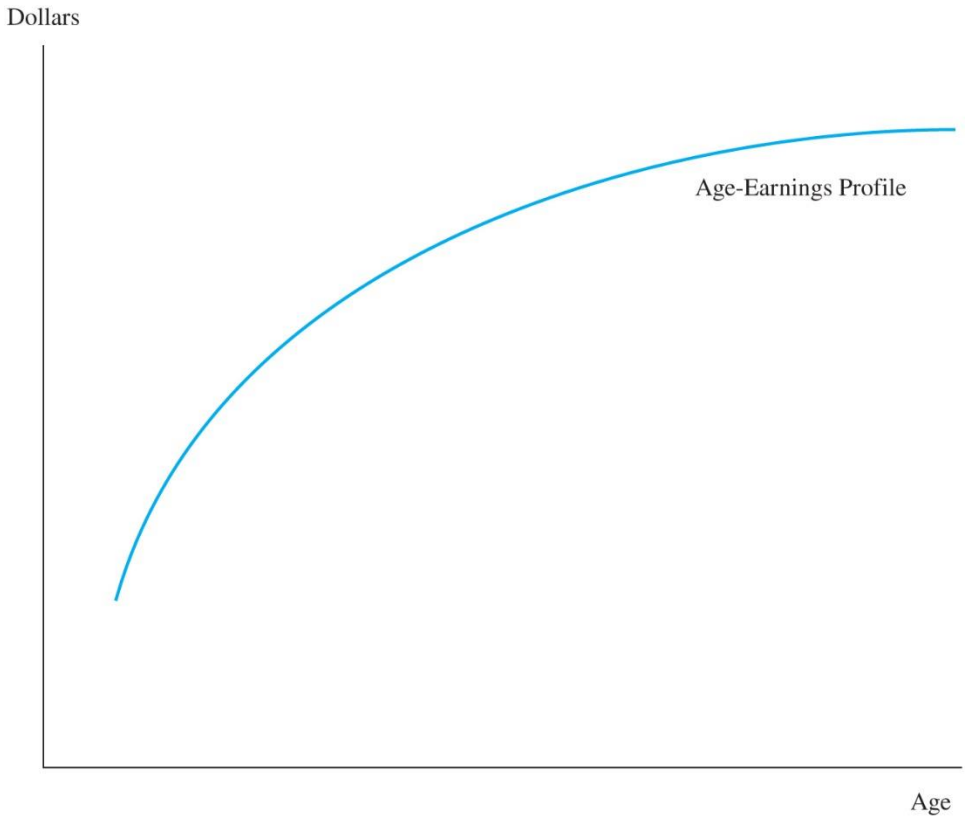
Age-Earnings Profiles and OJT

Human capital investments are more profitable the earlier they are taken.

The Mincer earnings function:

- $\text{Log}(w) = a \cdot s + b \cdot t - c \cdot t^2 + \text{other variables}$.
- The "overtaking age" is t* and indicates the time when the worker slows down acquisition of human capital to collect the return on prior investments so as to "overtake" earnings of those that did not undertake similar investments.

The Age-Earnings Profile Implied by Human Capital Theory



The age-earnings profile is upward-sloping and concave. Older workers earn more because they invest less in human capital and because they are collecting the returns from earlier investments. The rate of growth of earnings slows down over time because workers accumulate less human capital as they get older.

Policy Application: Evaluating Government Training Programs

Aimed at exposing disadvantaged and low-income workers to training programs.

$4 billion of federal spending per year.

Studies of the return to these human capital investments are unclear, largely because of self-selection bias.

Social Experiments

National Supported Worker Demonstration (NSW).

- Results of the NSW suggest a 10% return to investments in human capital for workers treated under the program.

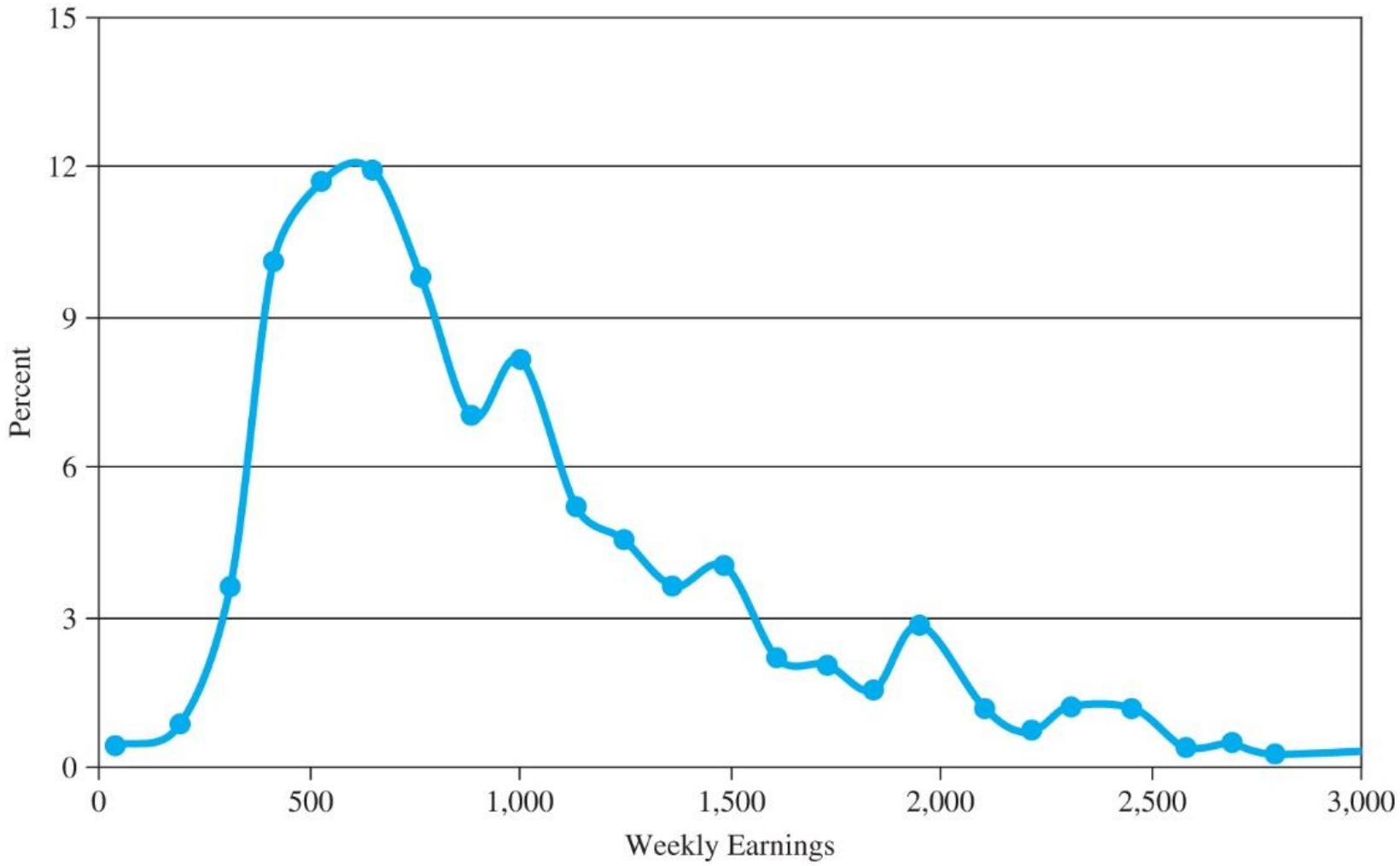
The Earnings Distribution

The wage distribution is positively skewed.

- A long right tail.

A small percent of workers earn disproportionately large shares of the rewards for work.

The Wage Distribution in the United States, 2012



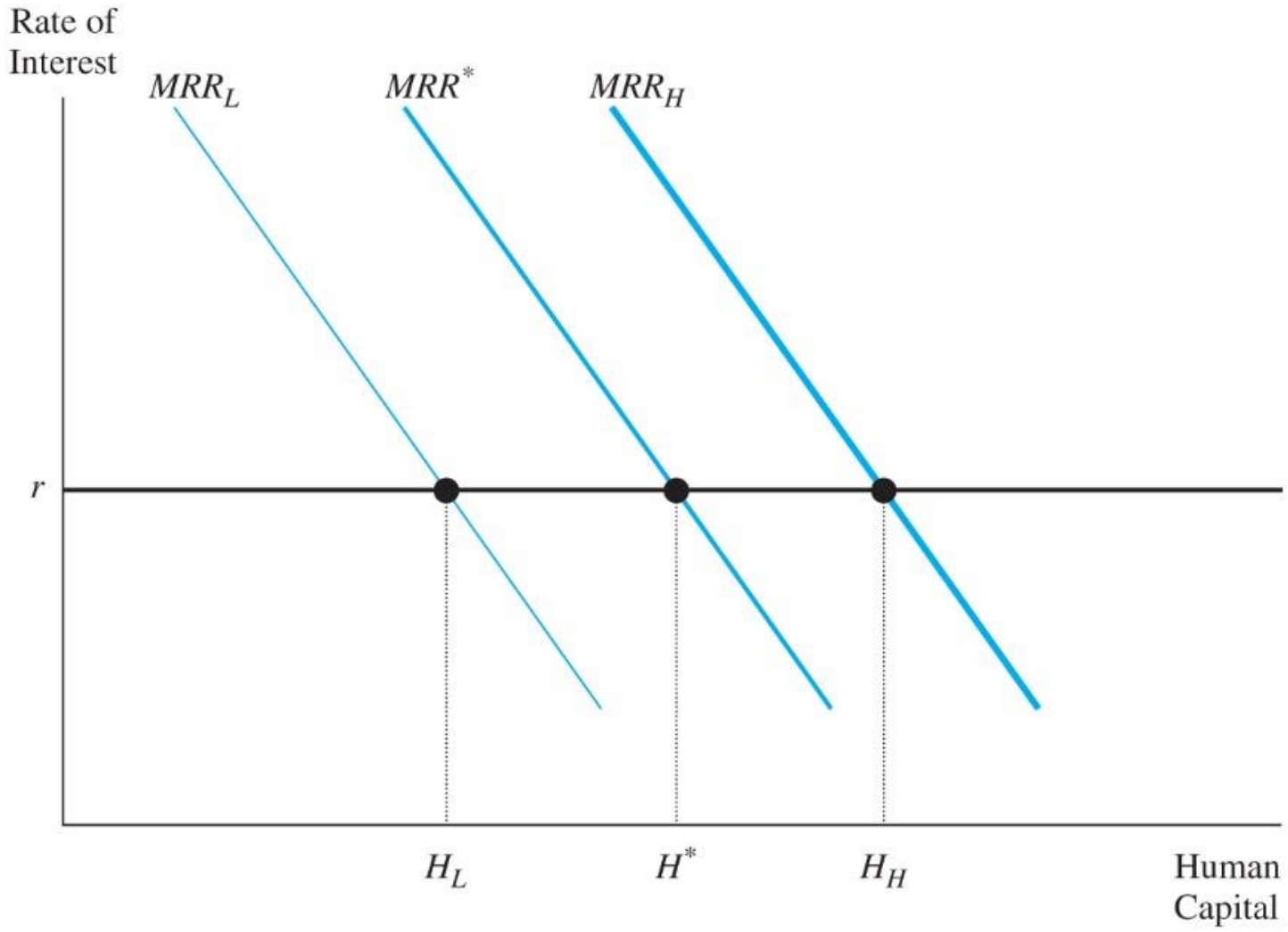
Facts About the Earnings Distribution

Wage differentials exist due to:

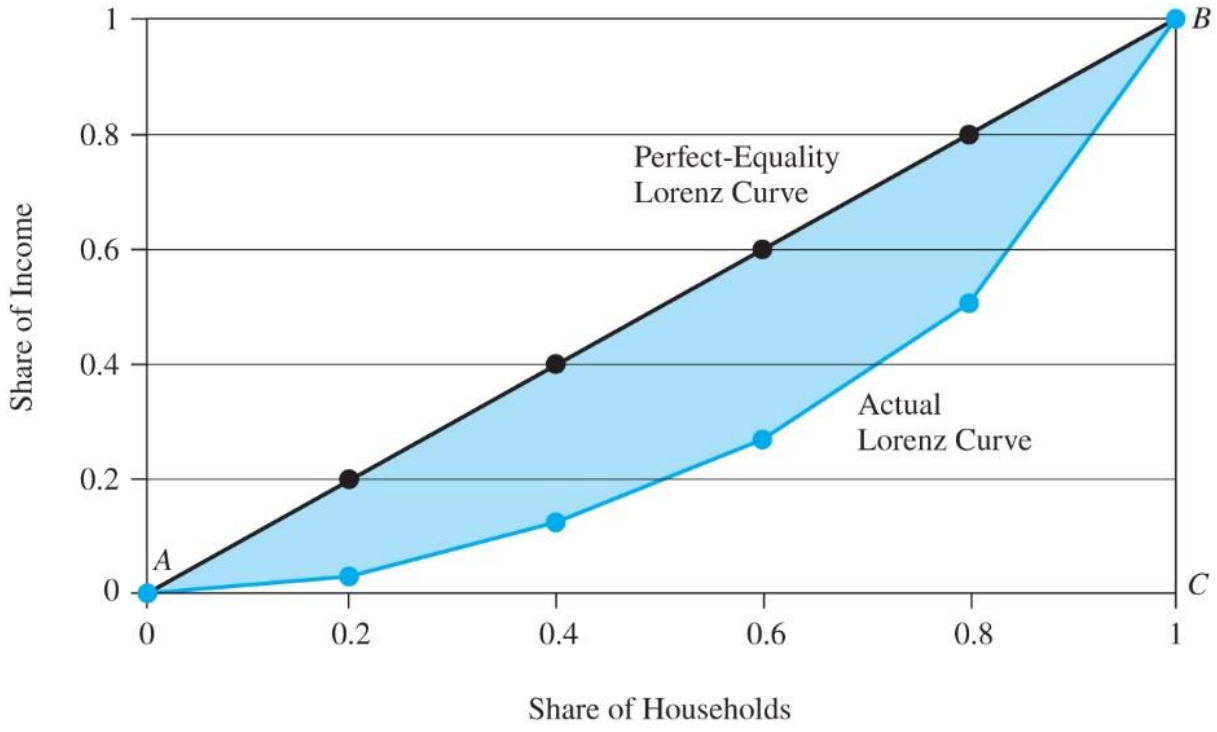
- Human capital investments that vary from worker to worker.
- Age differences. (Young workers are still accumulating human capital, while older workers are collecting returns from earlier investments.)

There is a positive correlation between ability and human capital investments, which "stretches out" wages in the population.

Income Distribution When Workers Differ in Ability



Measuring Inequality: 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.

Measuring Inequality: 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).

Measuring Inequality: Basic Facts

- Wage gaps provide wage ratios between different percentiles in the distribution.
- Examples of Wage Gap definitions:
  - The 90-10 Wage Gap is the difference in the 90^{th} and 10^{th} percentiles as a percent of the 10^{th} percentile wage, or $(w_{90} - w_{10})/w_{10}$
  - The 50-10 Wage Gap is the difference in the 50^{th} and 10^{th} percentiles as a percent of the 10^{th} percentile wage, or $(w_{50} - w_{10})/w_{10}$

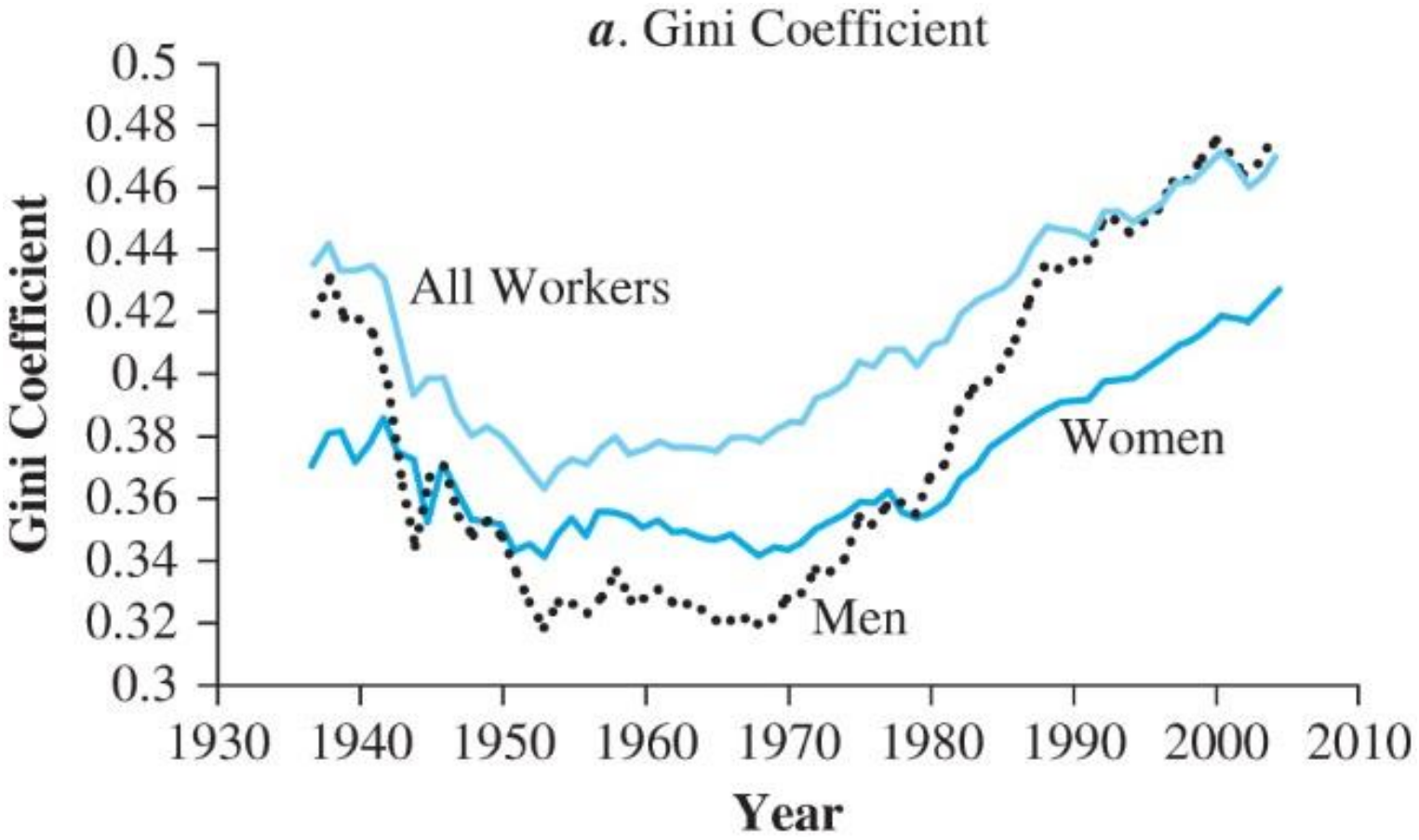
Changes in the Wage Structure: The 1980s

The wage gap between those at the top of the wage distribution and those at the bottom widened dramatically.

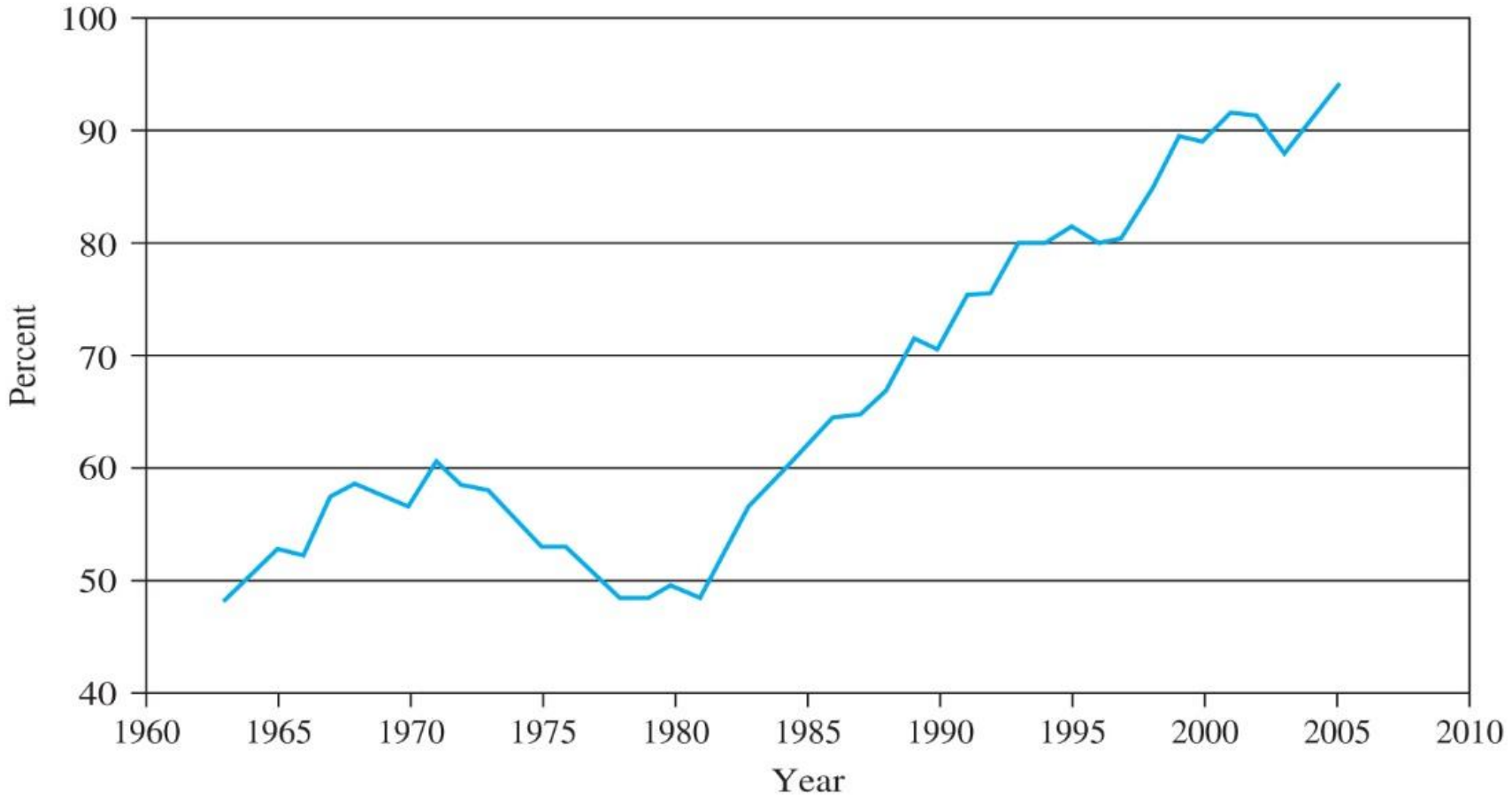
Wage differentials widened among education groups, experience groups, and age groups.

Wage differentials widened within demographic and skill groups.

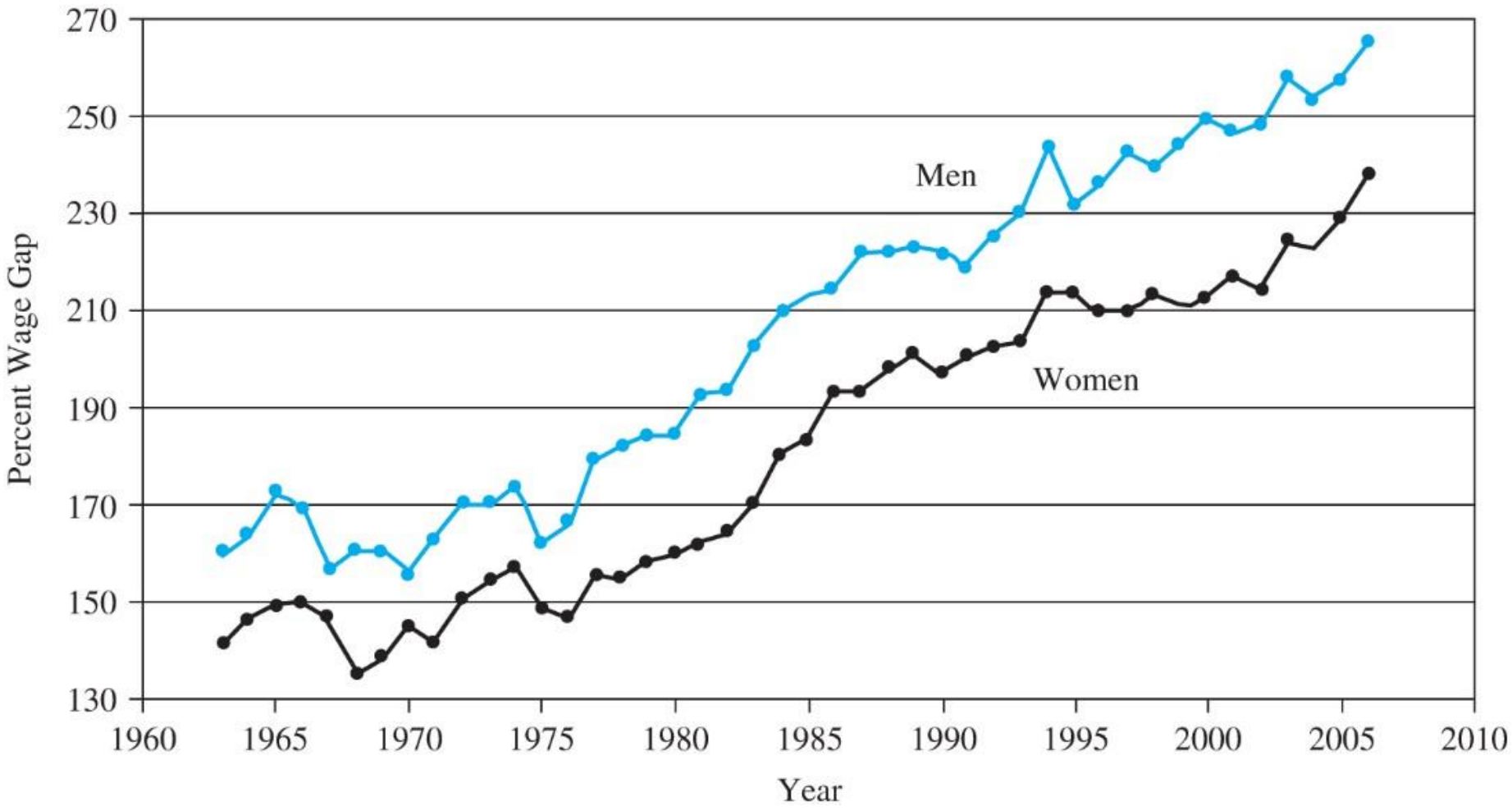
Earnings Inequality for Full-Time, Year-Round Workers, 1937-2005: The Gini Coefficient



Earnings Inequality for Full-Time, Year-Round Workers, 1963-2005: The College Wage Differential



Earnings Inequality for Full-Time, Year-Round Workers, 1963-2005: The 90-10 Wage Gap



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.

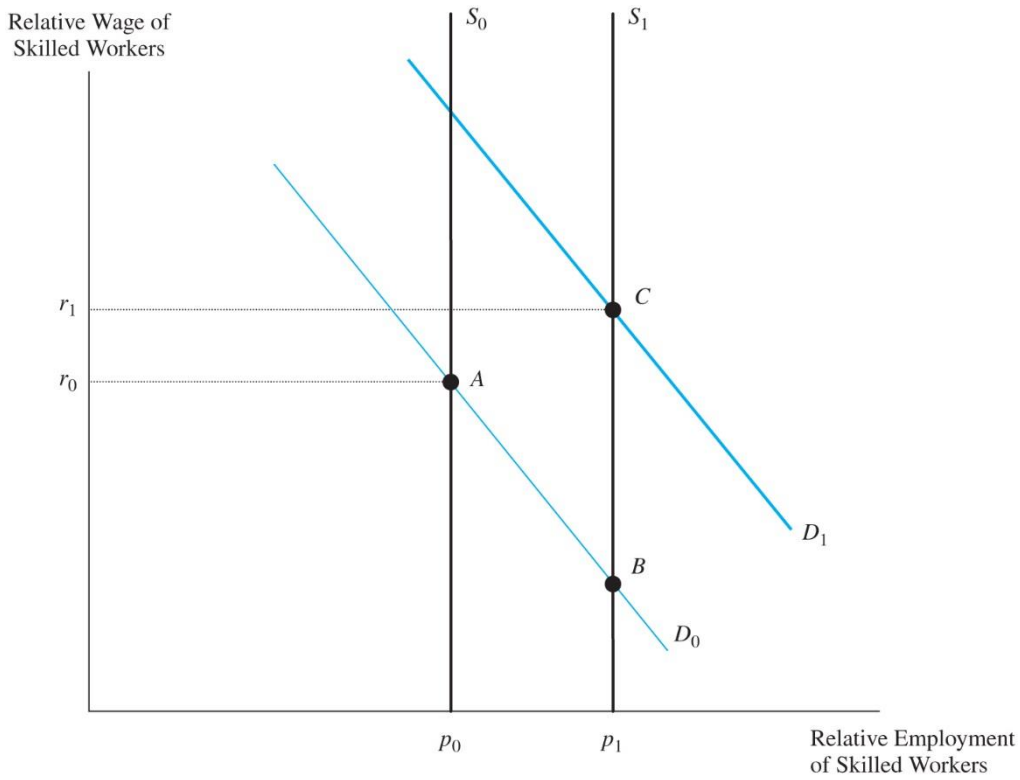
Possible Factors That Widened the Wage Gap

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.

Changes in the Wage Structure from Shifts in Supply 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*).

Why Did Wage Inequality Increase?

Supply shifts.

International trade.

Skill-based technological change.

Institutional changes in the U.S. labor market.

- Unions
- Minimum Wage

Inequality Across Generations

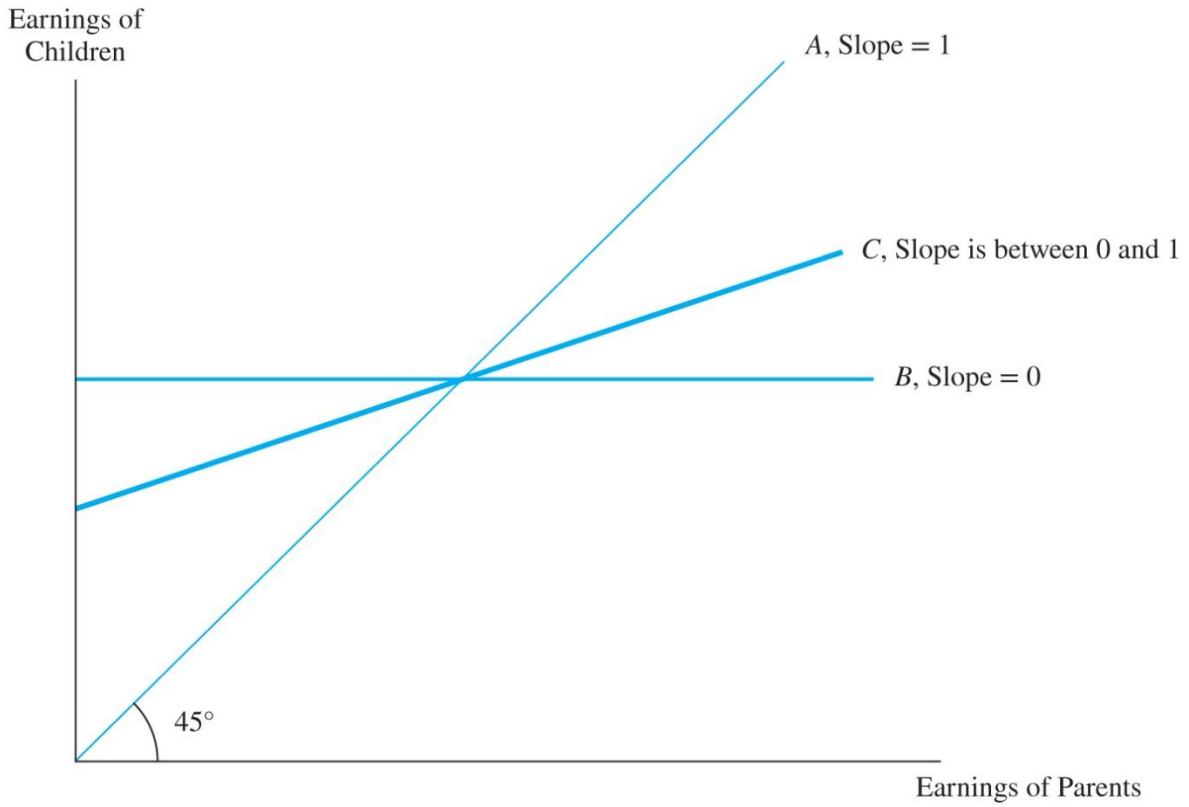
There is a positive correlation between the skills of parents and their children.

High-income parents typically invest more in the education of their children than do low-income parents.

There is a tendency for income differences across families to get smaller over time (“regression toward the mean”).

The Intergenerational Link in Skills

The slope of the regression line between child earnings and parental earnings is the intergenerational correlation. If the slope equals 1, the parent's earnings persists entirely into the next generation, and there is no regression toward the mean. If the slope equals 0, the wage of children is independent of the wage of the parents, and there is complete regression toward the mean.



Social Capital

The quality of the environment where a child grows up helps determine human capital.

There is evidence that varied factors influence a child's level of human capital.

- Quality of neighborhood.
- Importance of religious organizations.
- Socioeconomic background of classmates.