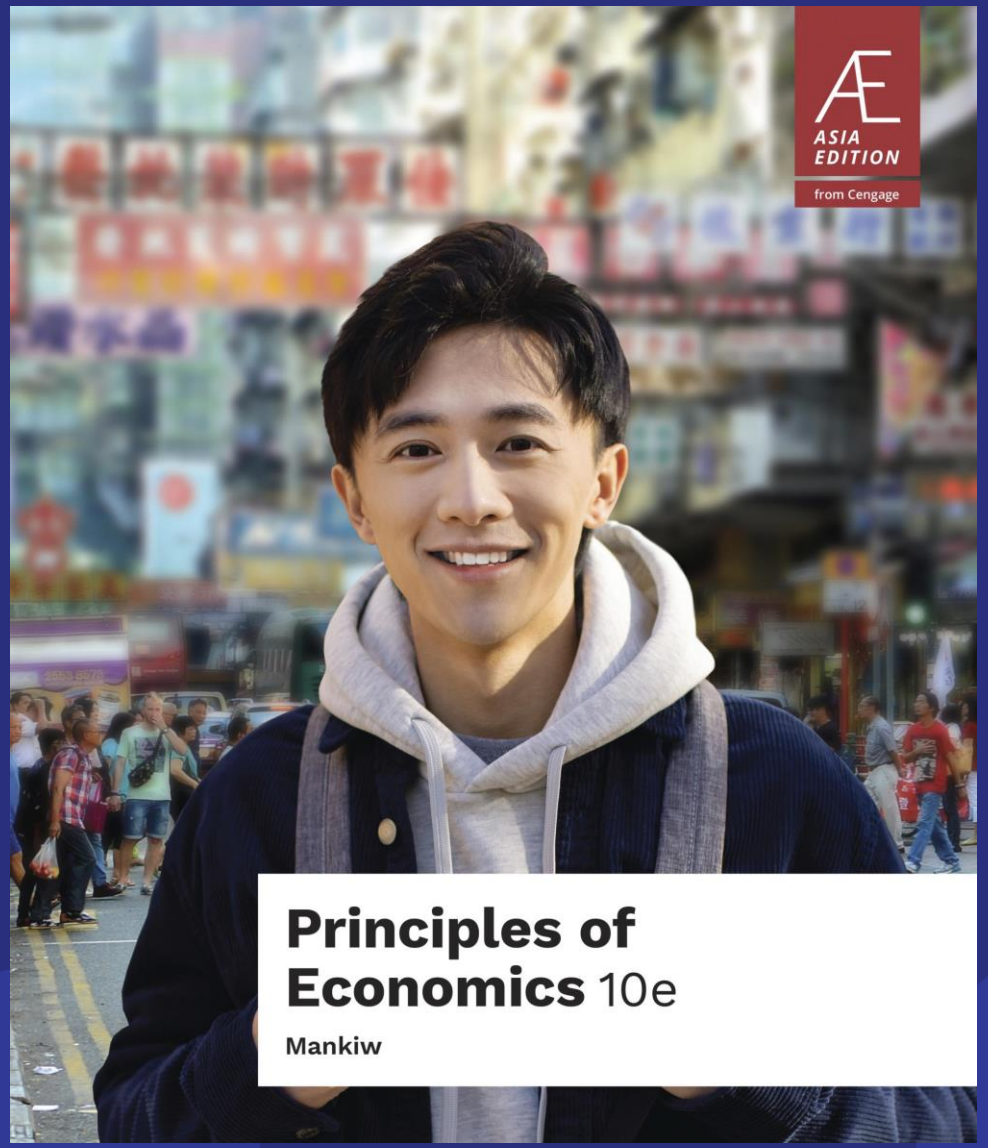

Principles of Economics, 10e

Chapter 19: The Markets for the Factors of Production

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Chapter Objectives (1 of 3)

By the end of this chapter, you should be able to:

- Analyze the markets for the factors of production.
- Explain the concept of diminishing marginal product of labor.
- Analyze the role that the value of the marginal product and wage play in input decisions.
- Calculate a firm's value of the marginal product for an input.
- Calculate the marginal product of labor, given data on a firm's production technology.

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Chapter Objectives (2 of 3)

- Determine if a change in the marginal product of labor or the output price causes a movement along or shift of the firm's labor-demand curve.
- Explain how changes in labor demand impact market equilibrium.
- Explain the relationship between markets for different factors of production.
- Explain how a change in a labor supply determinant impacts labor supply.
- Explain how changes in labor supply impact market equilibrium.

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Chapter Objectives (3 of 3)

- Determine the equilibrium price and quantity for a factor of production using the supply and demand model.
- Determine the equilibrium wage and quantity of labor in the market for labor.
- Explain how a change in a labor demand determinant impacts labor demand.
- Derive the impact of a change in the quantity of a factor of production on the market for a different factor of production.

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19-1

The Demand for Labor

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Factors of Production

- **Factors of production***
  - Inputs used to produce goods and services
  - Labor, land, capital
- Demand for a factor of production is a **derived demand**
  - Firm's demand for a factor of production is derived from its decision to *supply* a good in *another* market
  - E.g., the demand for programmers is linked to the supply of software, and the demand for gas station attendants is linked to the supply of gasoline

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The Competitive, Profit-Maximizing Firm

- Labor market
  - Governed by supply and demand
- Labor demand is a derived demand
- Rather than being final goods ready to be consumed, most labor services are inputs into the production of other goods
- Firms hire the labor and use it to produce goods for sale
- The link between the supply of goods and the demand for labor to produce them is crucial in determining equilibrium wages

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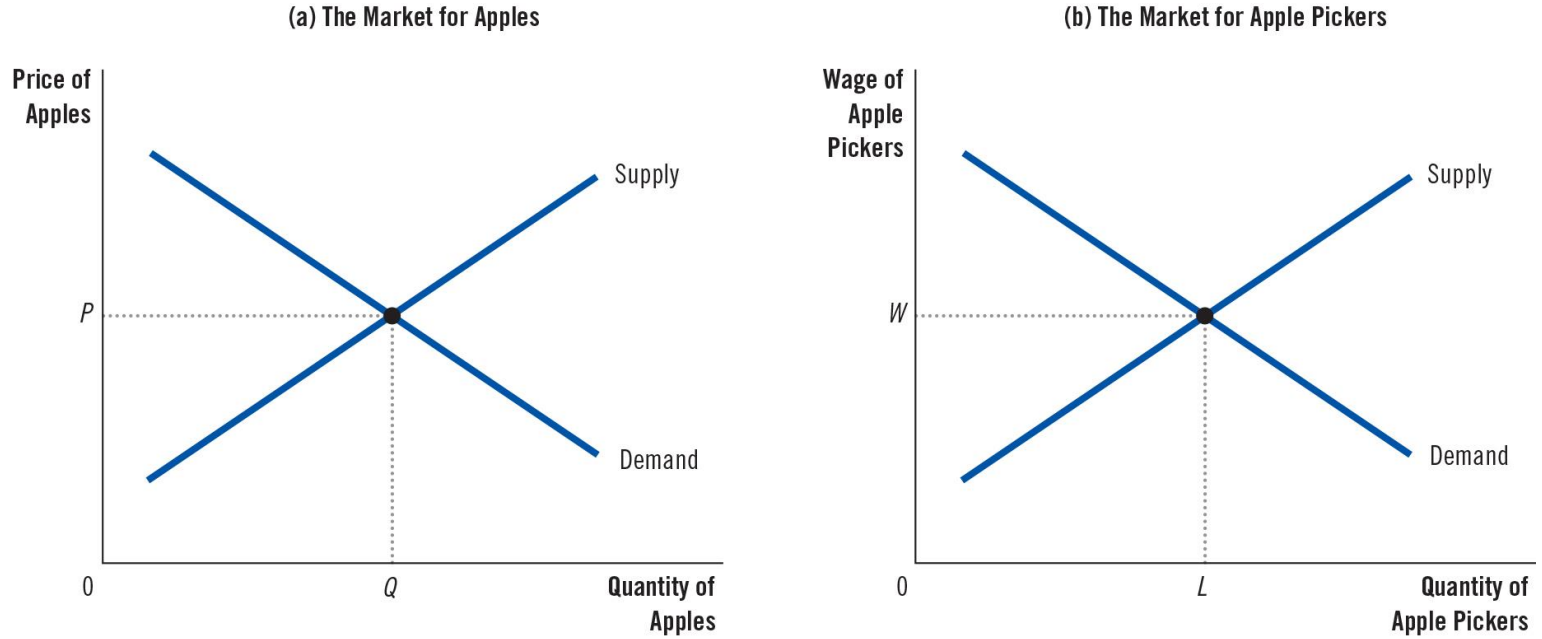
Figure 1 The Versatility of Supply and Demand

The basic tools of supply and demand apply to goods and to labor services. Panel (a) shows how the supply and demand for apples determine the price of apples. Panel (b) shows how the supply and demand for apple pickers determine the wage of apple pickers.



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Assumptions for the Firm

- Firm is **competitive** in
  - Market for apples (where it is a seller)
  - Market for apple pickers (where it is a buyer)
- Firm is **profit-maximizing**
  - Firm's supply of apples and demand for workers are derived from primary goal of maximizing profit

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The Production Function

- **Production function***
  - Relationship between the quantity of inputs used to make a good and the quantity of output of that good
- Becomes flatter as the quantity of input increases

*Words accompanied by an asterisk are key terms from the chapter.

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The Marginal Product of Labor

- **Marginal product of labor***
  - Increase in the amount of output from an additional unit of labor
- **Diminishing marginal product***
  - The marginal product of an input declines as the quantity of the input increases
  - Explains the shape of the production function

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Table 1 How the Competitive Firm Decides How Much Labor to Hire

(1) Labor *L*	(2) Output *Q*	(3) Marginal Product of Labor *MPL = ΔQ/ΔL*	(4) Value of the Marginal Product of Labor *VMPL= P × MPL*	(5) Wage *W*	(6) Marginal Profit *ΔProfit = VMPL-W*
0 workers	0 bushels				
1	100	100 bushels	$1,000	$500	$500
2	180	80	800	500	300
3	240	60	600	500	100
4	280	40	400	500	-100
5	300	20	200	500	-300

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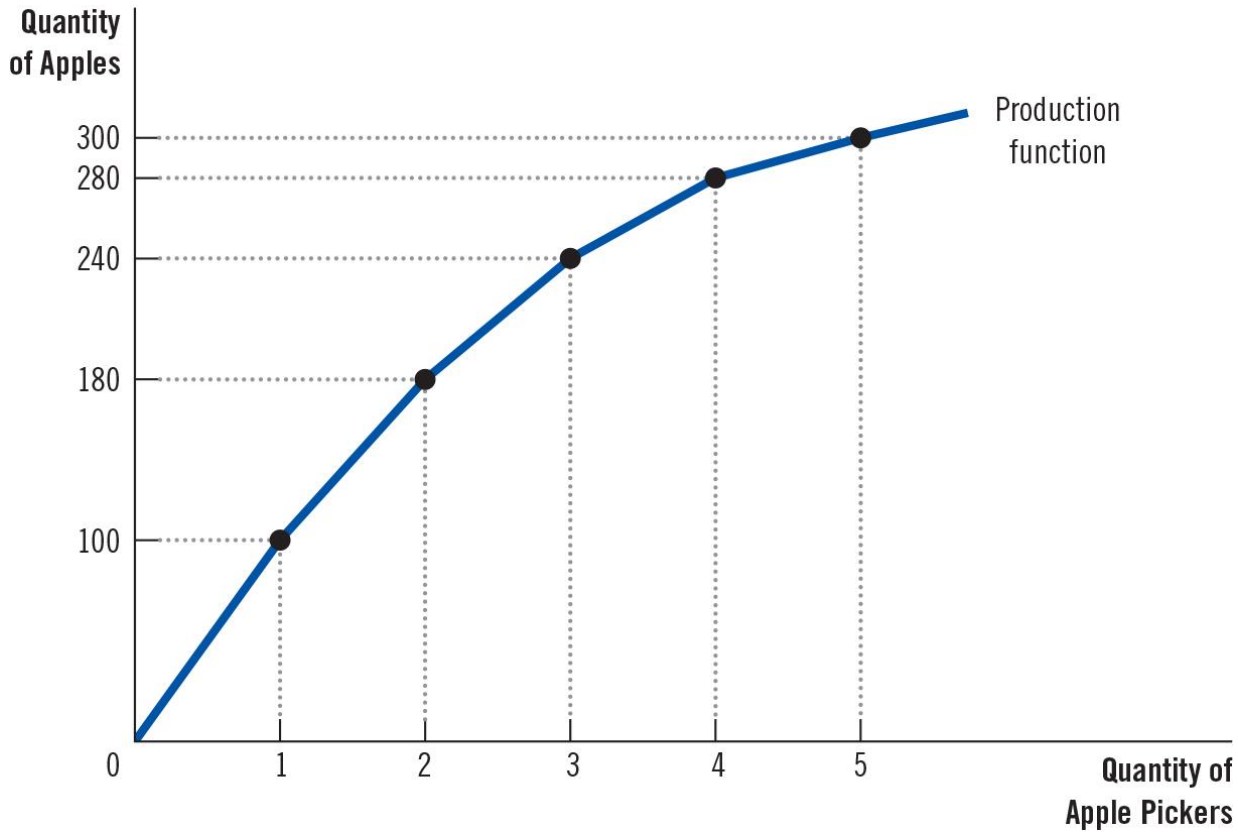
Figure 2 The Production Function

- The production function shows how an input into production (apple pickers) influences the output from production (apples).
- As the quantity of the input increases, the production function gets flatter, reflecting the property of diminishing marginal product.



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The Value of the Marginal Product (1 of 2)

- **Value of the marginal product***
  - Marginal product of an input times the price of the output
- **Marginal revenue product** is the extra revenue the firm gets from hiring an additional unit of a factor of production

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Table 1 How the Competitive Firm Decides How Much Labor to Hire

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1	100	100 bushels	$1,000	$500	$500
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3	240	60	600	500	100
4	280	40	400	500	-100
5	300	20	200	500	-300

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The Value of the Marginal Product (2 of 2)

- Competitive, profit-maximizing firm
  - Hires workers up to the point where the value of the marginal product of labor equals the wage
- The value-of-marginal-product curve is the labor-demand curve for a competitive, profit-maximizing firm

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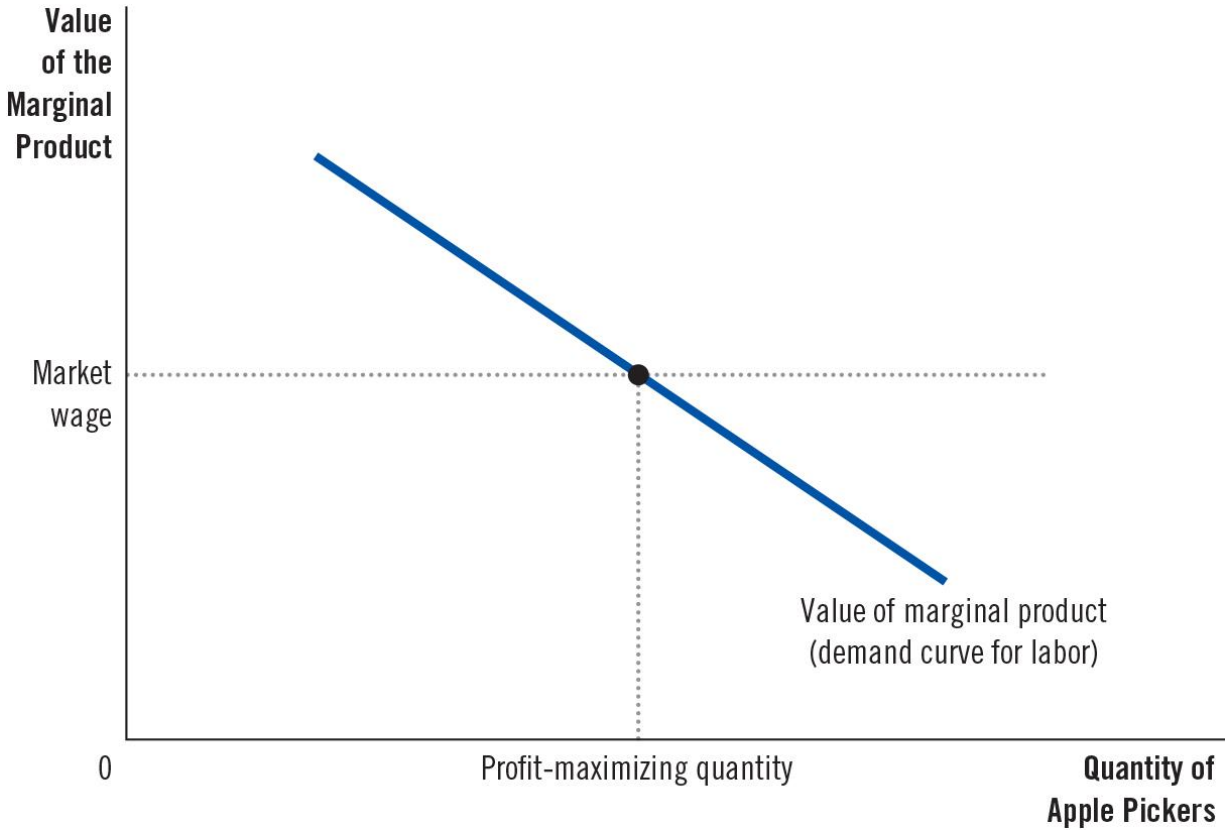
Figure 3 The Value of the Marginal Product of Labor

- This figure shows how the value of the marginal product (the marginal product times the price of the output) depends on the number of workers.
- *The curve slopes downward because of diminishing marginal product.*
- For a competitive, profit-maximizing firm, this value-of-marginal-product curve is also the firm's labor-demand curve.



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Active Learning 1: Xavier's Truck *MPL* and *VMPL*

- The table which shows Xavier's popcorn truck input and output
- The price of popcorn is P = \$5 per bucket of popcorn
  - Calculate *MPL* and *VMPL*
  - Graph a curve with *VMPL* on the vertical axis, *L* on horizontal axis

Workers *L*	Buckets *Q*
0	0
1	30
2	55
3	75
4	90
5	100

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Active Learning 1: Answers (1 of 2)

Workers *L*	Buckets Q	*MPL = ΔQ / ΔL*	*VMPL = P × MPL*
0	0		
1	30	30	150
2	55	25	125
3	75	20	100
4	90	15	75
5	100	10	50

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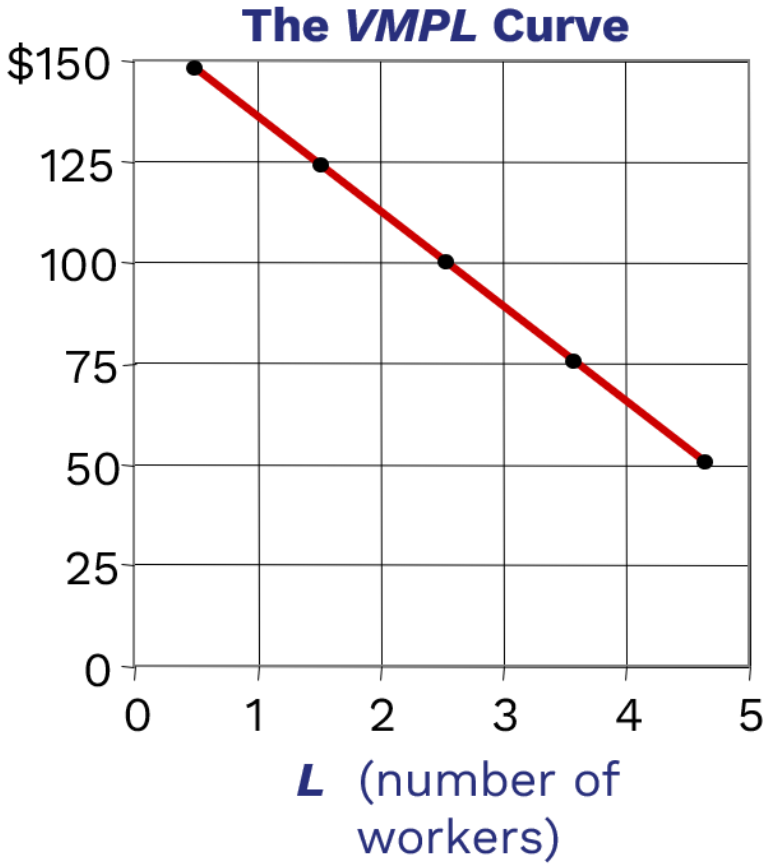
Active Learning 1: Answers (2 of 2)

Workers *L*	Buckets *Q*	*MPL = ΔQ/ΔL*	*VMPL = P× MPL*
0	0		
1	30	30	150
2	55	25	125
3	75	20	100
4	90	15	75
5	100	10	50



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What Causes the Labor-Demand Curve to Shift? (1 of 2)

- Output price
  - When the output price changes, the value of the marginal product changes, and the labor-demand curve shifts
- Technological change
  - **Labor-augmenting** technological advance can raise MPL, shifting labor-demand curve to the *right* (more common)
  - **Labor-saving** technology can reduce MPL, shifting labor-demand curve to the *left* (e.g., the invention of a cheap industrial robot, less common)

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What Causes the Labor-Demand Curve to Shift? (2 of 2)

- Supply of Other Factors
  - The quantity of one factor of production that is available can affect the marginal product of other factors
  - E.g., the productivity of apple pickers depends on the availability of ladders

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19-2

The Supply of Labor

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The Trade-Off between Work and Leisure

- People face trade-offs
- Trade-off between work and leisure
- Labor-supply curve
  - Reflects workers' decisions about the labor-leisure trade-off
  - Respond to a change in opportunity cost of leisure

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Labor-Supply Decision

- Labor-supply decision
  - The **income effect** reflects the response of hours worked due to a change in a person's level of economic well-being
  - The **substitution effect** reflects the response of hours worked due to a change in the opportunity cost of leisure
- For now, let's we assume that the substitution effect dominates, so the labor-supply curve *slopes upward*

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What Causes the Labor-Supply Curve to Shift?

- Changes in preferences
  - Changing preferences or attitudes toward work
- Changes in alternative opportunities
  - Opportunities available in other labor markets
- Immigration
  - Movement of workers from region to region or country to country

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19-3

Equilibrium in the Labor Market

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Equilibrium Wage

- Any *event that changes the supply or demand for labor* must change the **equilibrium wage** and the **value of the marginal product** by the *same* amount because *these must always be equal*
  - The wage adjusts to balance the supply and demand for labor
  - The wage equals the value of the marginal product of labor

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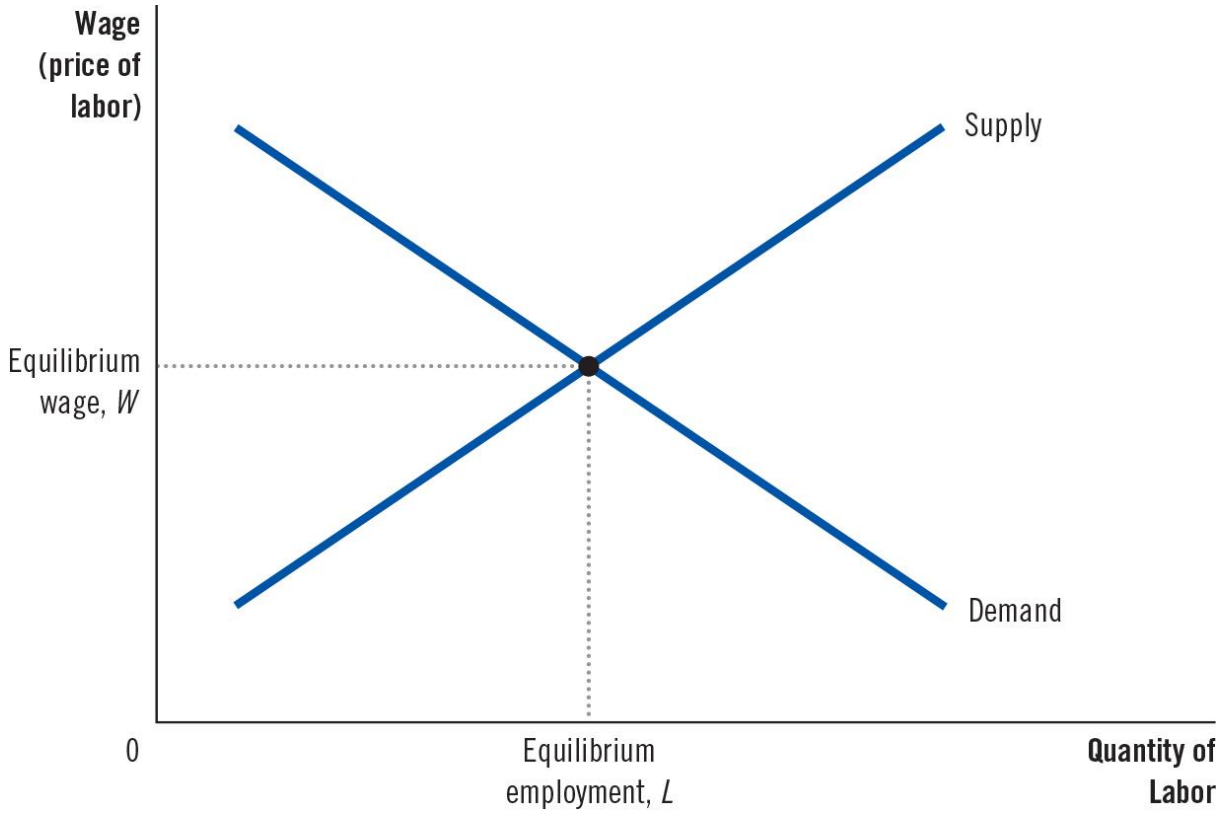
Figure 4 Equilibrium in a Labor Market

- Like all prices, the price of labor (the wage) depends on supply and demand.
- Because the demand curve reflects the value of the marginal product of labor, in equilibrium, workers receive the value of their marginal contribution to the production of goods and services.



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Shifts in Labor Supply

- Increase in supply
  - Decrease in wage
  - Lower marginal product of labor
  - Lower value of marginal product of labor
  - Higher employment

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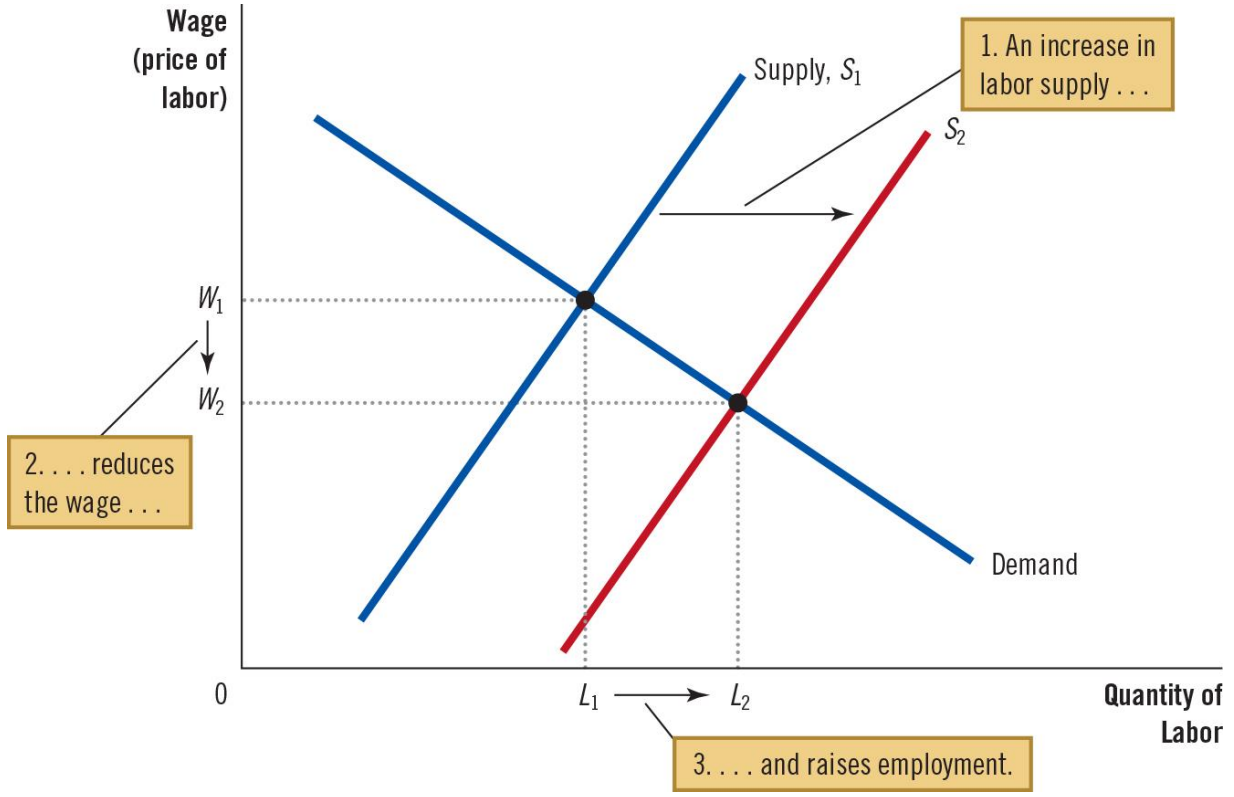
Figure 5 A Shift in Labor Supply

- When labor supply increases from S_1 to S_2, perhaps because of an immigration wave of new workers, the equilibrium wage falls from W_1 to W_2. At this lower wage, firms hire more labor, so employment rises from L_1 to L_2.
- The change in the wage reflects a change in the value of the marginal product of labor: With more workers, the added output from an extra worker is smaller.



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Shifts in Labor Demand

- Increase in demand
  - Higher wage
  - *No change* in marginal product of labor *for any given number of workers*
  - Higher value of marginal product of labor
  - Higher employment
- Prosperity for firms in an industry is often linked to prosperity for workers in that industry
  - Workers in oil fields know their earnings are closely linked to the world price of crude oil

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Figure 6 A Shift in Labor Demand

- When labor demand increases from D_1 to D_2, perhaps because of an increase in the price of the firm's output, the equilibrium wage rises from W_1 to W_2, and employment rises from L_1 to L_2.
- The change in the wage reflects a change in the value of the marginal product of labor: With a higher output price, the added output from an extra worker is more valuable.

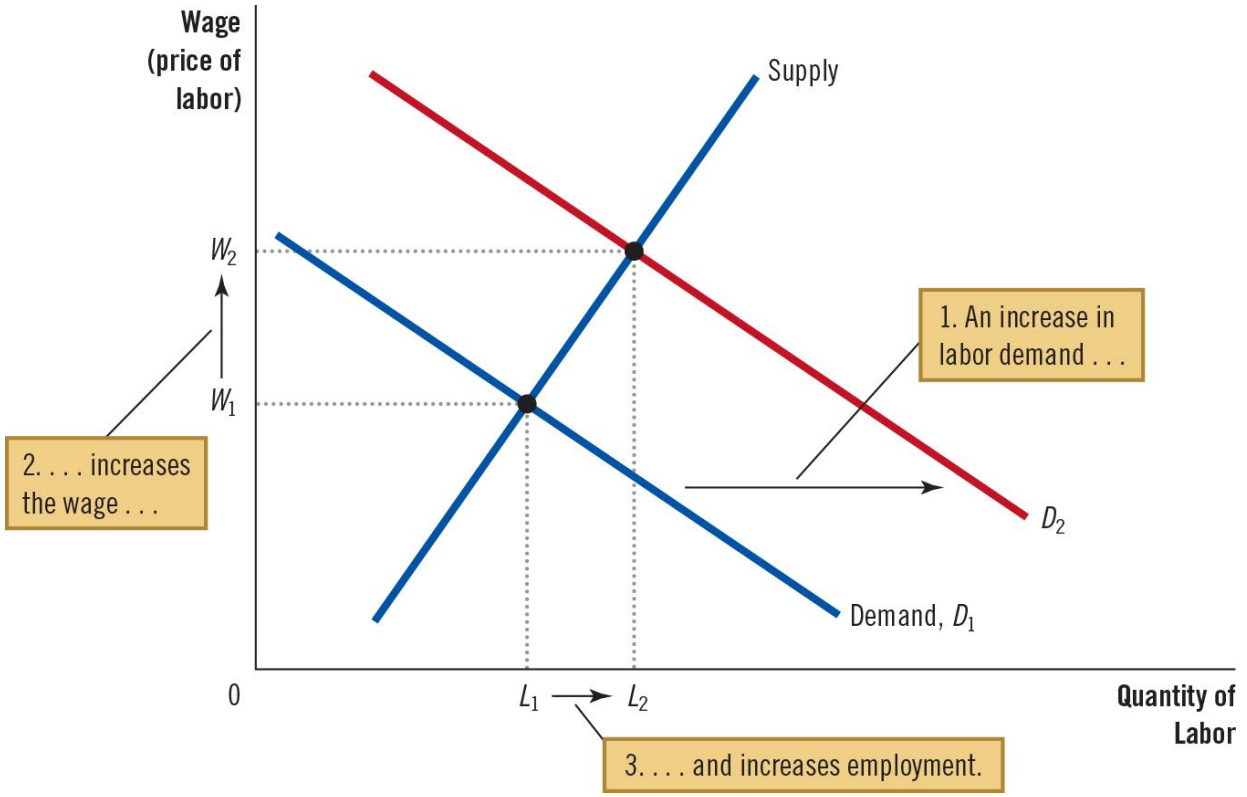

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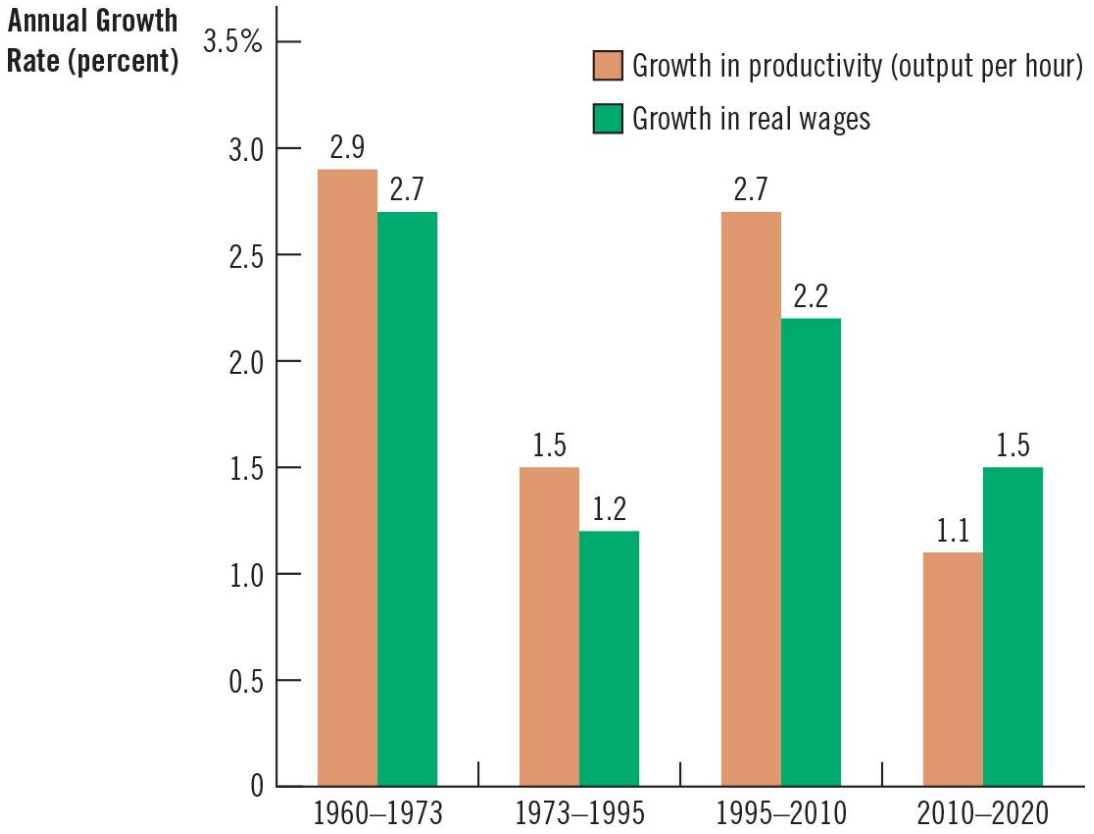
Figure 7 Growth in Productivity and Real Wages

- *Wages equal productivity* as measured by the value of the marginal product of labor
- When productivity grows rapidly, so do real wages.
- When productivity growth is more modest, real wage growth is as well.

- Source: Bureau of Labor Statistics. Growth in productivity is measured here as the annualized rate of change in output per hour in the nonfarm business sector. Growth in real wages is measured as the annualized change in compensation per hour in the nonfarm business sector divided by the price deflator for that sector. These productivity data measure average productivity—the quantity of output divided by the quantity of labor—rather than marginal productivity, but average and marginal productivity are thought to move closely together.



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The Immigration Debate (1 of 2)

- A wave of immigration may lower wages in those labor markets in which the new immigrants seek work, but it could have the opposite effect in other labor markets
- The linkages among various markets—**general equilibrium effects**—make analyzing the full effect of immigration more complex than it first appears
- If the new immigrants look for jobs as apple pickers, the supply of apple pickers increases, and the wage of apple pickers declines

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The Immigration Debate

- But suppose the new immigrants are physicians who use some of their income to buy apples
- In this case, the wave of immigration increases the supply of physicians but also increases the demand for apples and thus apple pickers
- As a result, the wages of physicians decline, and the wages of apple pickers rise

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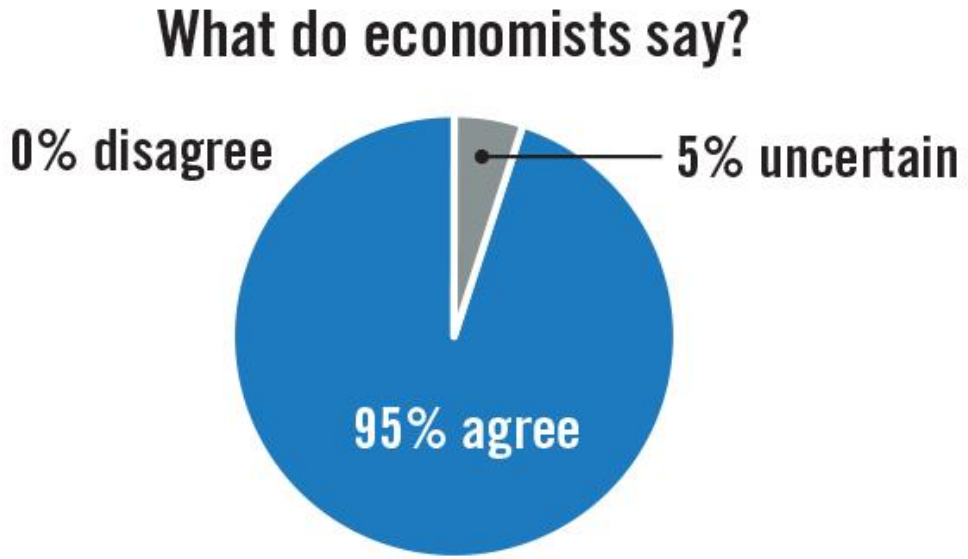
Ask the Experts: Immigration—A

"The average U.S. citizen would be better off if a larger number of highly educated foreign workers were legally allowed to immigrate to the U.S. each year."



Source: IGM Economic Experts Panel, February 12, 2013, December 10, 2013.

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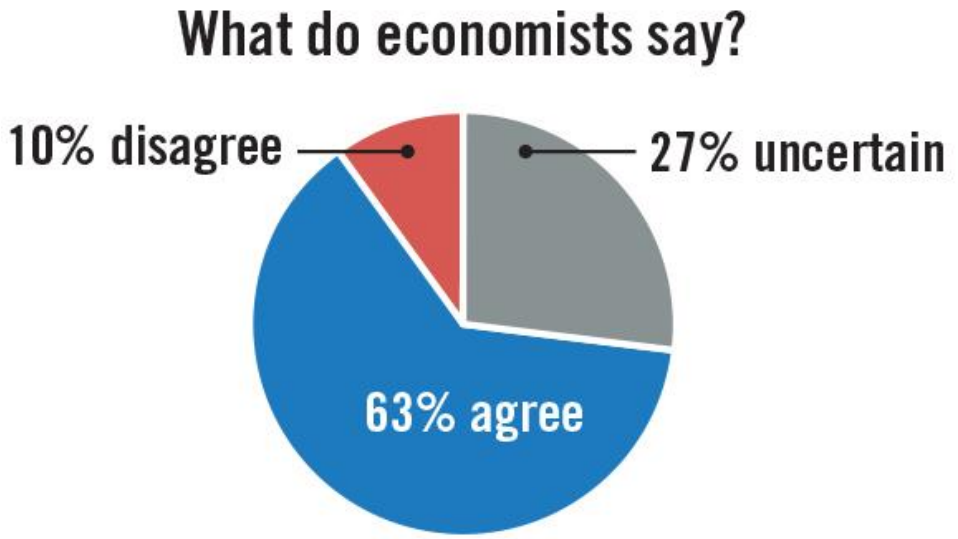
Ask the Experts: Immigration—B

"The average U.S. citizen would be better off if a larger number of low-skilled foreign workers were legally allowed to enter the U.S. each year."



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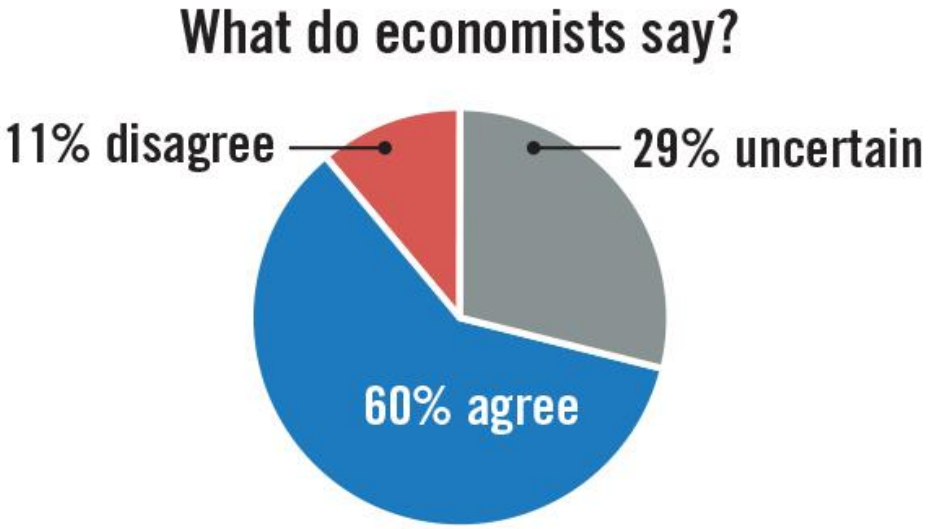
Ask the Experts: Immigration-C

"Unless they were compensated by others, many low-skilled American workers would be substantially worse off if a larger number of low-skilled foreign workers were legally allowed to enter the U.S. each year."



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19-4

The Other Factors of Production: Land and Capital

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Equilibrium in the Markets for Land and Capital (1 of 2)

- **Capital***
  - **Equipment and structures used to produce goods and services**
  - The accumulation of goods produced in the past that are being used in the present to produce new goods and services
- **Purchase price**
  - Price a person pays to own that factor of production indefinitely
- **Rental price**
  - Price a person pays to use that factor for a limited period of time

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Equilibrium in the Markets for Land and Capital (2 of 2)

- As long as the firms using the factors of production are competitive and profit-maximizing, *each factor's* ***rental price*** *must equal the value of its marginal product*
- **Labor**, **land**, and **capital** all *earn the value of their marginal contributions to the production process*
- Equilibrium **purchase price** depends on
  - Current value of the marginal product
  - Value of the marginal product expected to prevail in the future
- Buyers are willing to pay more for a piece of land or capital if it produces a valuable *stream of rental income*

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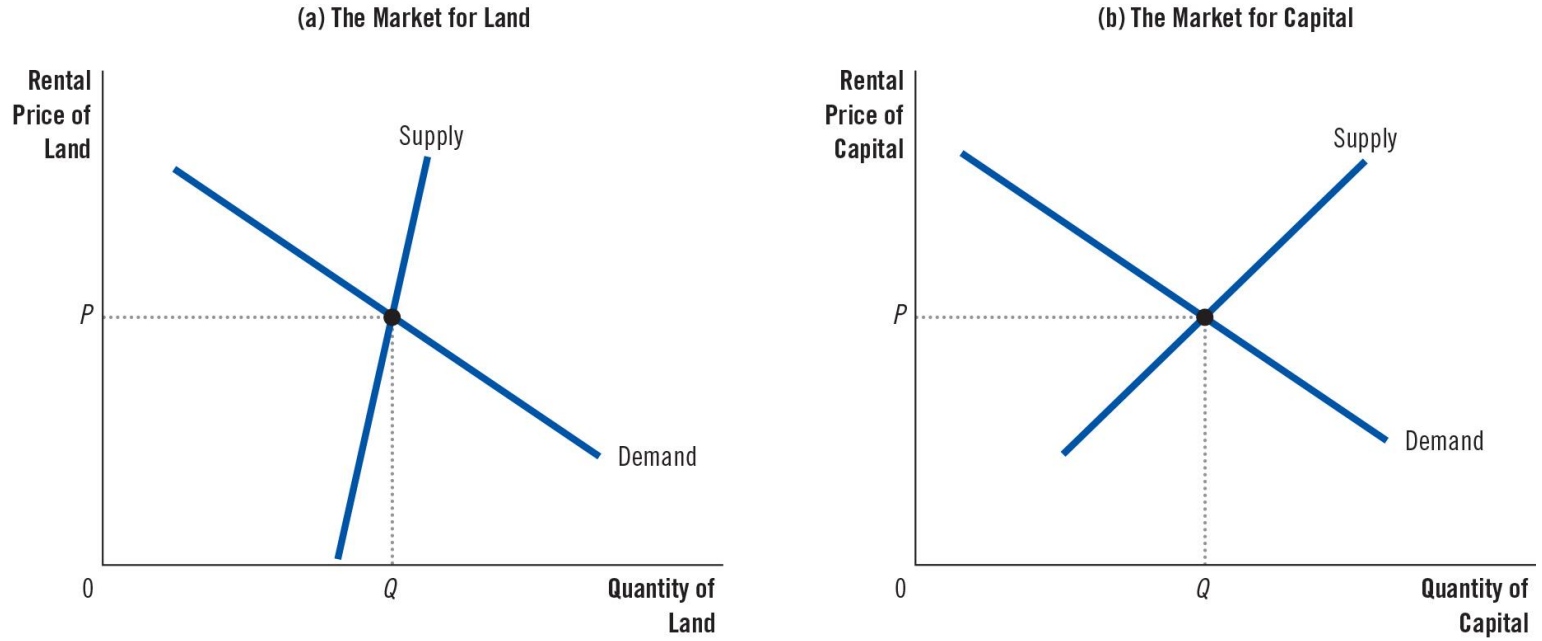
Figure 8 The Markets for Land and Capital

Supply and demand determine the compensation paid to the owners of land, as shown in panel (a), and the compensation paid to the owners of capital, as shown in panel (b). The demand for each factor, in turn, depends on the value of its marginal product.



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Linkages among the Factors of Production

- Factors of production are used together
  - In a way that makes each factor's productivity dependent on the quantities of the other factors
- **An event that changes the supply of any factor of production can alter the earnings of all the factors**
  - E.g., when the supply of ladders falls, the workers who pick apples can't perform their jobs as efficiently
  - The marginal product of labor decline, and the equilibrium wage fall

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19-5

Conclusion

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Conclusion

- The theory developed in this chapter is called the neoclassical theory of distribution
  - The amount paid to each factor of production depends on the supply and demand for that factor
  - The demand, in turn, depends on that factor's marginal productivity
  - In equilibrium, each factor of production earns the value of its marginal contribution to the production of goods and services

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Think-Pair-Share Activity (1 of 2)

You are watching a debate about immigration on public television with a friend. The participants represent two camps—organized labor and corporate industry. Organized labor argues against open immigration while U.S. industry argues in favor of more open immigration. Your friend says, “I can’t believe that these two groups can’t get together on this issue. Both firms and workers join forces to produce our industrial output. I would think that their interests would be similar. Maybe a better arbitrator could help these groups find a position on immigration that would satisfy both groups.”

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Think-Pair-Share Activity (2 of 2)

A. If there were open immigration, what would happen to the value of the marginal product of labor and the wage?
B. If there were open immigration, what would happen to the value of the marginal product of capital and land and their rental rates?
C. Are the positions that each group takes on immigration consistent with their interests? Explain. Is there likely to be a solution that satisfies both? Why or why not?

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Self-Assessment

- If the population of the United States suddenly grew because of a large wave of immigration, what would happen to wages? What would happen to the rents earned by the owners of land and capital?

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Summary

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Link to Objectives

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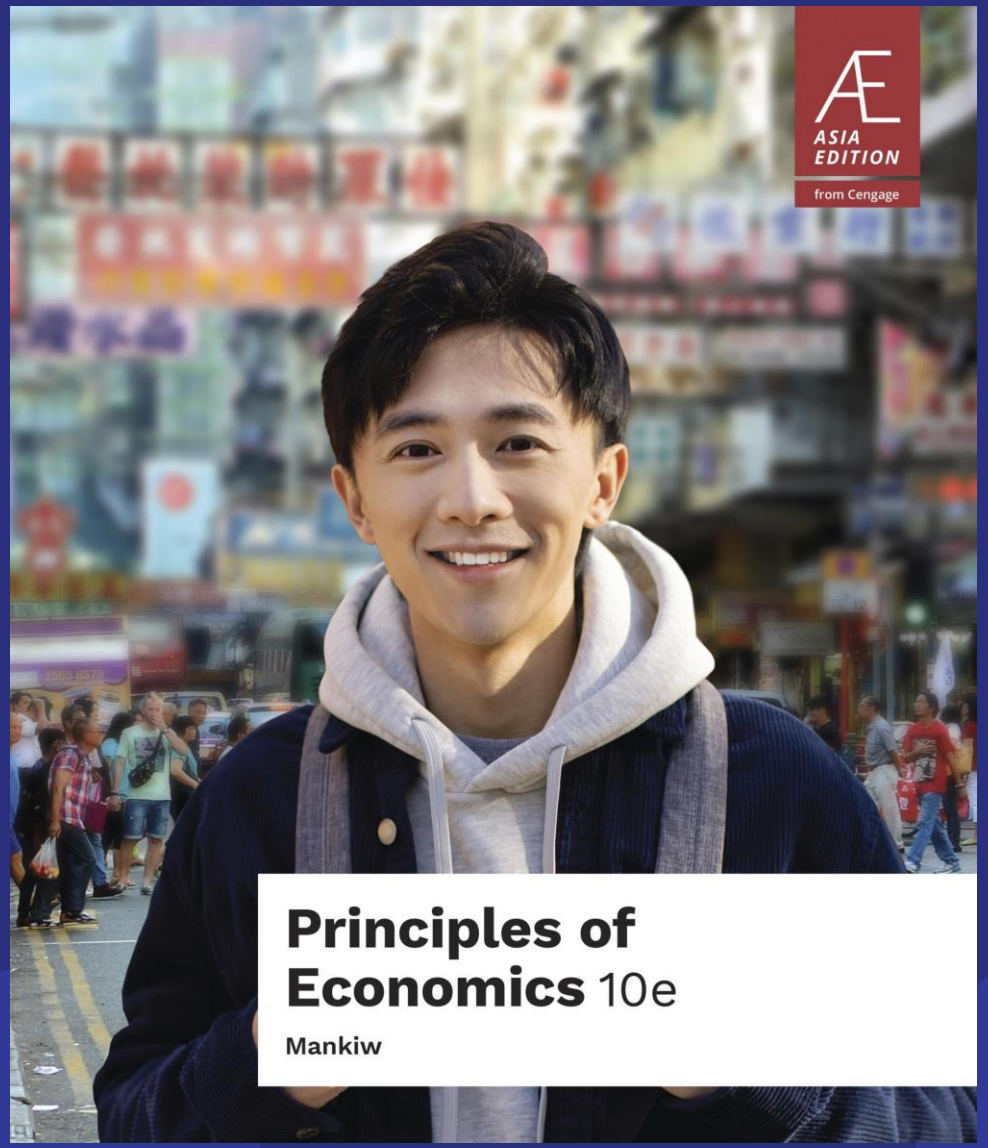

Principles of Economics, 10e

Chapter 20: Earnings and Discrimination

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Chapter Objectives (1 of 2)

By the end of this chapter, you should be able to:

- Given a scenario describing workers' wages, identify the economic justification for this differential.
- Compare the signaling and human-capital theory of education.
- Explain how discrimination by employers, customers, and governments affects market outcomes.
- Analyze the impact of efficiency wages on the labor market.

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Chapter Objectives (2 of 2)

- Analyze the effect of unions and collective bargaining on the labor market.
- Recognize various wage determinants.

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20-1

What Determines Wages?

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Compensating Differentials

- **Compensating differentials***
  - Difference in wages that arises to offset the nonmonetary characteristics of different jobs
- Higher supply of labor for “good” jobs
  - Lower equilibrium wage
- Lower supply of labor for “bad” jobs
  - Higher equilibrium wage

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Human Capital (1 of 2)

- **Human capital***
  - Accumulation of investments in people, such as education and on-the-job training
- Education represents an expenditure of resources to raise future productivity
  - Workers with more human capital earn more, on average, than those with less

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Human Capital (2 of 2)

- The difference in wages may be considered a compensating differential for the cost of acquiring human capital
  - Firms—the demanders of labor—pay more for highly educated workers because these workers have higher marginal products
  - Workers—the suppliers of labor—bear the cost of education because they expect a reward for doing so

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Table 1 Average Annual Earnings by Educational Attainment

- College graduates have always earned more than workers who did not attend college, but the gap has grown larger over the past few decades.

	1974	2019
Men		
High school, no college	$56,855	$52,677
College graduates	$80,973	$97,554
Percent extra for college grads	+42%	+85%
Women		
High school, no college	$32,675	$39,669
College graduates	$44,200	$70,657
Percent extra for college grads	+35%	+78%

Note: Earnings data are adjusted for inflation and are expressed in 2019 dollars. Data apply to full-time, year-round workers age 18 and over. Data for college graduates exclude workers with additional schooling beyond college, such as a master's degree or Ph.D.
Source: U.S. Census Bureau, Tables P-32 and P-35, and author's calculations.

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Ability, Effort, and Chance

- Natural ability
  - Workers with greater natural ability earn more
- Effort
  - People who work hard are more productive and earn more
- Chance
  - Can influence wage

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Active Learning 1: Education

- 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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An Alternative View of Education: Signaling

- In the signaling theory of education, schooling has no real productivity benefit, but workers signal their innate productivity to employers by their willingness to spend years at school
  - An action is being taken not for its intrinsic benefit but because the willingness to take that action conveys private information to someone observing it
- Benefits of education are probably a combination of
  - Productivity-enhancing effects of human capital
  - Productivity-revealing effects of signaling

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The Superstar Phenomenon

- Superstars in the field
  - Great public appeal and astronomical incomes
- Superstars arise in markets with two characteristics
  - Every customer in the market wants to enjoy the services supplied by the best producers
  - Services are produced with a technology that makes it possible for the best producers to supply every customer at low cost

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Below-Equilibrium Wages: Monopsony

- **Monopsony***
  - A market that has only one buyer
- A monopsony in a labor market
  - Reduces the number of jobs available
  - Moves along the labor supply curve
  - Reduces the wage it pays
  - Increases its profit

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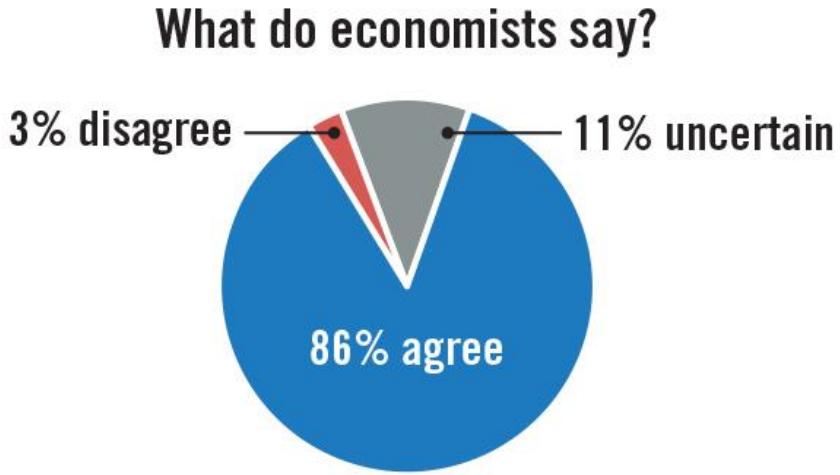
Ask the Experts: Competition in Labor Markets

"The use of non-compete clauses in U.S. employment contracts reduces workers' mobility and wages by more than is justified by the protection of employers' intellectual property and trade secrets."



Source: IGM Economic Experts Panel, August 3, 2021.

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Above-Equilibrium Wages: Minimum-Wage Laws, Unions, and Efficiency Wages (1 of 2)

- Reasons for above-equilibrium wages
  - Minimum-wage laws
  - Market power of labor unions
  - Theory of efficiency wages
- Effects of above-equilibrium wages
  - Surplus of labor
  - Unemployment

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Above-Equilibrium Wages: Minimum-Wage Laws, Unions, and Efficiency Wages (2 of 2)

- **Union***
  - A worker association that bargains with employers over wages and working conditions
- **Strike***
  - a collective refusal to work organized as a form of protest
- **Efficiency wages***
  - Above-equilibrium wages paid by firms to increase worker productivity

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Active Learning 2: Which Job Earns More?

- In each case, identify which worker would earn more and use the concepts in this chapter to explain why.
  A. The best doctor on the planet or one of the best actors on the planet.
  B. A trucker who hauls produce or a trucker who hauls hazardous waste.
  C. A college graduate or an equally intelligent and capable high-school graduate.
  D. Someone who graduated from a university with a 3.7 GPA or someone who graduated from the same university with a 2.4 GPA.

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Active Learning 2: Answers

A. The superstar phenomenon: The best actor can service many more customers than the best doctor can.

B. Compensating differentials: The hazardous waste hauler earns more to compensate for the higher risks.

C. The signaling theory of education: Employers assume the college grad has more ability than the high-school grad.

D. The human capital theory of education: A higher GPA reflects greater learning, which leads to higher productivity and wages.

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20-2

The Economics of Discrimination

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Discrimination

- **Discrimination***
  - The offering of different opportunities to similar individuals who differ only by race, ethnicity, gender, age, religion, sexual orientation, or other personal characteristics

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Table 2 Median Annual Earnings by Race and Sex

	White	Black	Percent by Which Earnings Are Lower for Black Workers
Men	$60,017	$45,644	24%
Women	$48,845	$41,098	16%
Percent by Which Earnings Are Lower for Women Workers	19%	10%	

Note: Earnings data are for the year 2019 and apply to full-time, year-round workers aged 14 and over. Individuals who report more than one race are excluded from these data.

Source: U.S. Census Bureau, Table P-38, and author's calculations.

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Discrimination by Employers

- If one group in society receives a lower wage than another group even after controlling for human capital and job characteristics, who is to blame?
  - Employers — discriminatory wage differences?
- Competitive market economies
  - Natural antidote to employer discrimination: Profit motive

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Discrimination by Customers and Governments

- Limits to the profit motive corrective abilities
- Customer preferences (discriminatory)
  - Willing to pay more to maintain the discriminatory practice
- Government policies
  - Mandate discriminatory practices

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Competitive Markets and Discrimination

- Competitive markets contain a natural remedy for employer discrimination
  - The entry of firms that care only about profit tends to eliminate discriminatory wage differentials
  - These differentials persist in competitive markets when customers are willing to pay to maintain the discriminatory practice or when the government mandates it

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Statistical Discrimination

- **Statistical discrimination***
  - Discrimination that arises because an irrelevant but observable personal characteristic is correlated with a relevant but unobservable attribute
- Employers have imperfect information about employees, they may discriminate against all members of a group whose average characteristics the employers find undesirable

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20-3

Conclusion

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Conclusion

- The theory of the labor market developed in the last two chapters explains why some workers earn higher wages than other workers
  - In competitive markets, workers earn a wage equal to the value of their marginal contribution to the production of goods and services
  - Firms tend to pay more for workers who are talented, diligent, experienced, and educated because these workers are more productive
  - Firms are likely to pay less to those workers against whom customers discriminate because these workers contribute less to revenue

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Think-Pair-Share Activity (1 of 2)

To eliminate wage differentials due to discrimination, the government creates a panel to decide what jobs should pay so that people of similar skills and education earn the same amount.

A. Suppose an administrative assistant and a truck driver are judged to require the same level of education and skills, yet an administrative assistant earns $30,000 while a truck driver earns $40,000. What would happen to the quantities supplied and demanded in the market for administrative assistants and truck drivers if the wage for these professions were set by law at $35,000?

B. What would happen to the level of effort and natural ability of the workers available in each market in question A? What would happen to the quality of work generated in each market?

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Think-Pair-Share Activity (2 of 2)

C. Suppose it is true that the skills and education required to do each job in question A are, in fact, nearly identical. What explanation would an economist likely propose to explain why the equilibrium wage differs by $10,000 across these markets?

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Self-Assessment

- Would you work as a summer intern for a private firm or the government for free? Why?

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Summary

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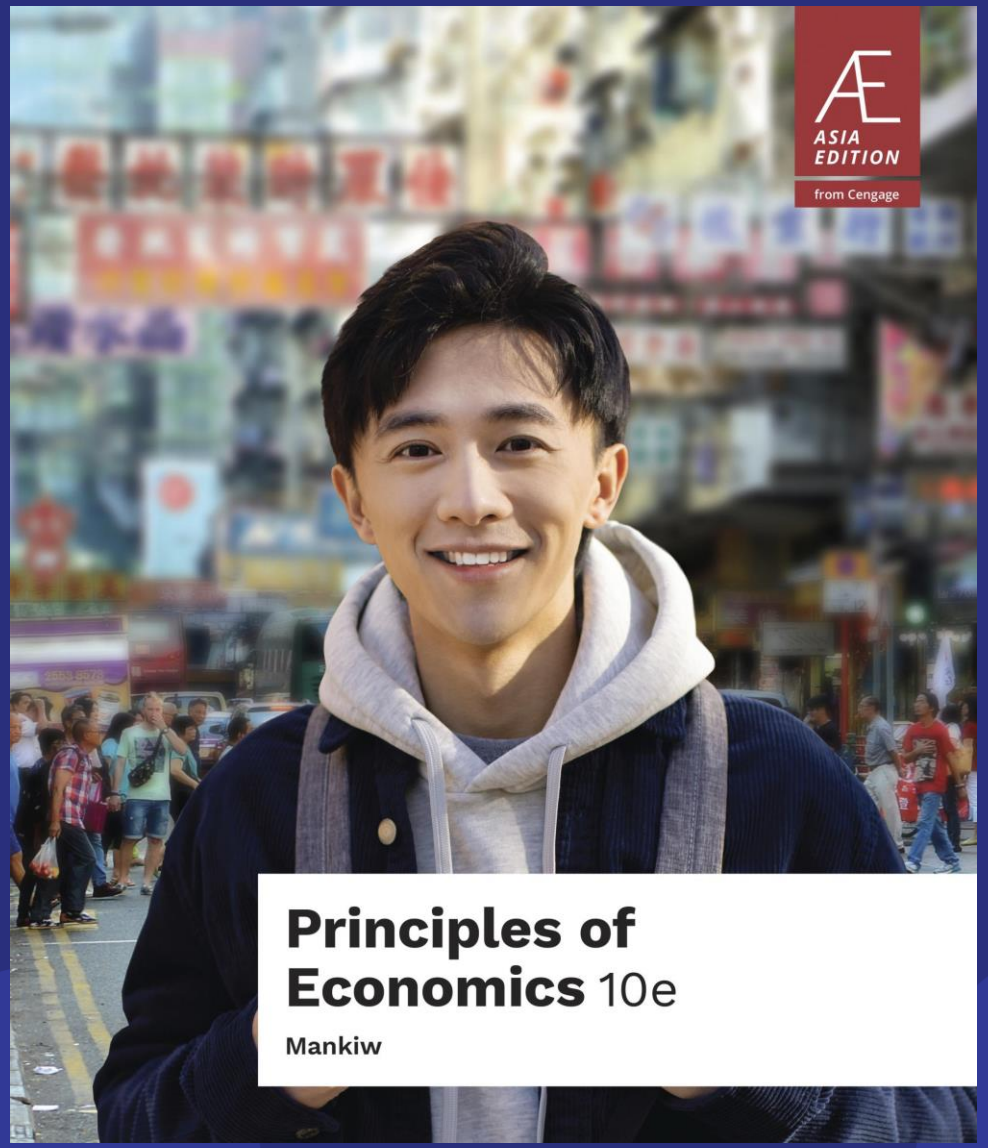

Principles of Economics, 10e

Chapter 21: Income Inequality and Poverty

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Chapter Objectives (1 of 2)

By the end of this chapter, you should be able to:

- Explain how the government's role in redistributing income differs based on whether it applies a utilitarian, liberal, or libertarian philosophy.
- Compare the degree of income inequality among different economies, given the income distribution in each economy.
- Given a household's size and income, determine if a household is living in poverty according to the country of origin's poverty line.

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Chapter Objectives (2 of 2)

- Analyze the factors contributing to income inequality.
- Explain why critics of antipoverty programs such as the minimum wage and welfare argue that these programs are ineffective at reducing poverty.
- Determine the effect of in-kind transfers on a household's poverty status.

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21-1

Measuring Inequality

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Introduction

- Market economies
  - Usually achieve greater prosperity
  - But prosperity is not shared equally
- Labor
  - The most important factor for determining households' standard of living

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Labor Earnings

- Labor earnings
  - 2/3 of all income (U.S. economy)
  - Depend on ability, effort, human capital, compensating differentials, discrimination, minimum wage laws, unions, efficiency wages, and monopsony power

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Measuring Inequality

- Four questions of measurement
  - How much inequality is there in our society?
  - How many people live in poverty?
  - What problems arise in measuring the amount of inequality?
  - How often do people move among income classes?

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Table 1 The Distribution of Family Income in the United States: 2019

- Distribution of income
  - Align families by income
  - Divide all families into five equal groups (quintiles)
  - Same number of families in each group

Group	Annual Family Income
Lowest Quintile	$40,000 and below
Second Quintile	$40,001–$69,000
Middle Quintile	$69,001–$105,038
Fourth Quintile	$105,039–$164,930
Highest Quintile	$164,931 and above
Top 5 percent	$304,153 and above

- Source: U.S. Bureau of the Census, Historical Income Tables, Table F-1.

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Table 2 Income Inequality in the United States

- This table shows the percentage of total before-tax income received
  - By families in each fifth of the income distribution
  - By families in the top 5 percent

Year	Lowest Quintile	Second Quintile	Middle Quintile	Fourth Quintile	Highest Quintile	Top 5%
2019	3.9%	9.2%	14.8%	22.5%	49.5%	21.9%
2010	3.8	9.4	15.4	23.5	47.9	20.0
2000	4.3	9.8	15.4	22.7	47.7	21.1
1990	4.6	10.8	16.6	23.8	44.3	17.4
1980	5.3	11.6	17.6	24.4	41.1	14.6
1970	5.4	12.2	17.6	23.8	40.9	15.6
1960	4.8	12.2	17.8	24.0	41.3	15.9
1950	4.5	12.0	17.4	23.4	42.7	17.3
1935	4.1	9.2	14.1	20.9	51.7	26.5

Source: U.S. Bureau of the Census, Historical Income Tables, Table F-2.

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U.S. Income Inequality

- Trends in income distribution
  - 1935–1970: More equal distribution
  - 1970–2019: More unequal distribution
- Reasons
  - Decrease in demand for unskilled labor and increase the demand for skilled labor
    - Increased trade with low-wage countries (such as China)
    - Skill-biased technological changes

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Inequality around the World

- Inequality measure: Quintile ratio
  - Income received by the richest quintile of the population
  - Divided by the income of the poorest quintile
- Degree of inequality varies substantially around the world

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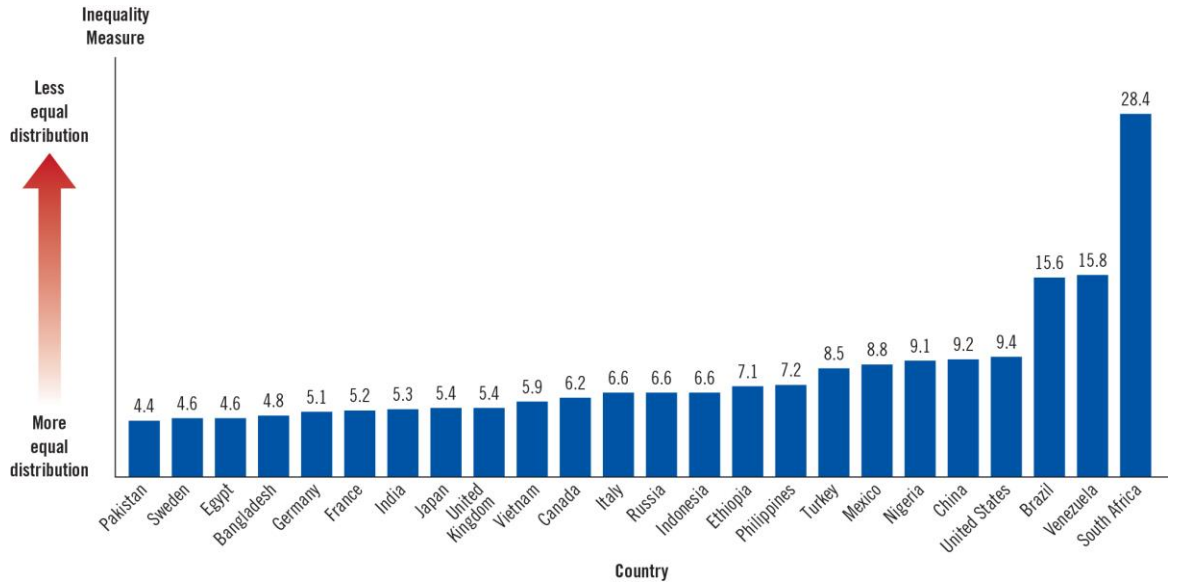
Figure 1 Inequality around the World

This figure shows the ratio of the income of the highest quintile to the income of the lowest quintile. Among these nations, Sweden and Pakistan have the most equal income distribution, while South Africa and Venezuela have the least equal.



Source: Human Development Report 2018 Statistical Update.

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Poverty Rate and Poverty Line

- **Poverty rate***
  - Percentage of the population whose family income falls below an absolute level (poverty line)
- **Poverty line***
  - An absolute level of income set by the federal government for each family size below which a family is deemed to be in poverty
    - Depends on family size
    - Adjusted every year to account for changes in the level of prices

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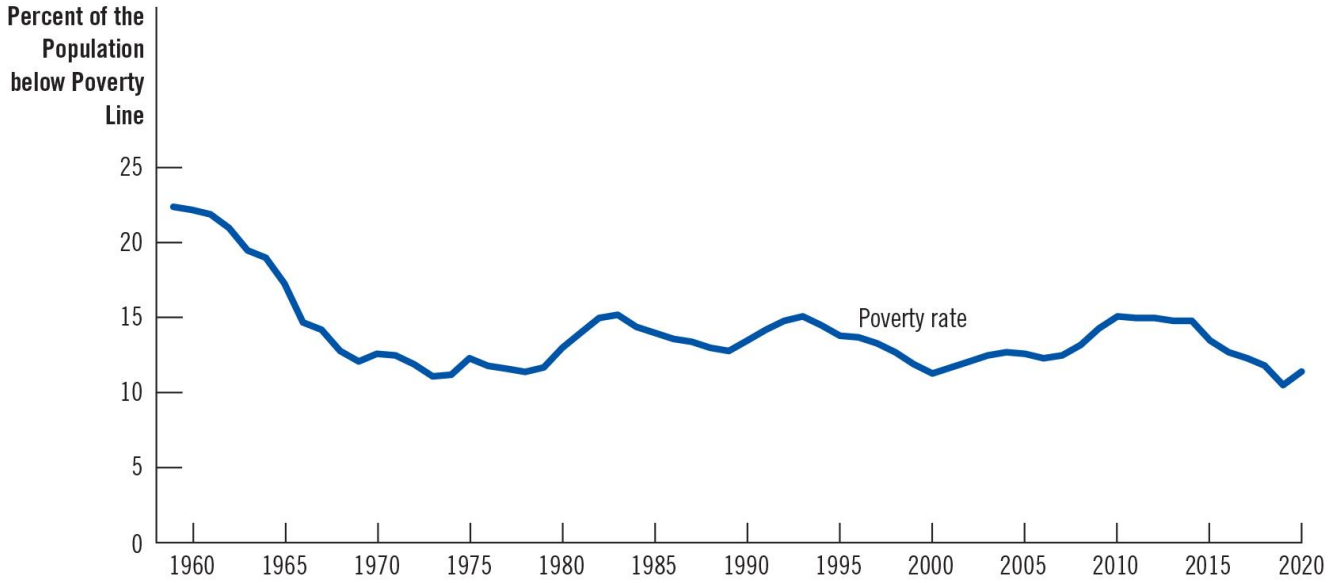
Figure 2 The Poverty Rate

- The poverty rate measures the percentage of the population with incomes below an absolute level called the poverty line.



Source: U.S. Bureau of the Census.

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Who Lives in Poverty? (1 of 2)

- Poverty is correlated with race
  - Blacks and Hispanics are more than twice as likely to live in poverty
- Poverty is correlated with age
  - Children are more likely than average to be members of poor families
  - Older adults are less likely than average to be poor

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Who Lives in Poverty? (2 of 2)

- Poverty is correlated with family composition
  - Families headed by a single mother are about five times as likely to live in poverty as families headed by a married couple

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Table 3 Who Lives in Poverty?

- This table shows that the poverty rate varies greatly among different groups within the population.

Group	Poverty Rate
All persons	10.5%
White, not Hispanic	7.3
Black	18.8
Hispanic	15.7
Asian	7.3
Children (under age 18)	14.4
Older adults (over age 64)	8.9
Married-couple families	4.6
Female household, no spouse present	24.3

Source: U.S. Bureau of the Census. Data are for 2019.

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Problems in Measuring Inequality

- Data on income distribution & poverty rate
  - Give us some idea about the degree of inequality in our society
  - Based on annual incomes families earn
    - People care about their ability to maintain a good standard of living
  - Incomplete picture of inequality in living standards

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Taxes and In-Kind Transfers

- Standard measures of income distribution and poverty
  - Based on families' pre-tax incomes
  - Earned income tax credit: Cash payments to many low-wage workers are not included
  - Based on monetary incomes
    - In-kind transfers are not included
- **In-kind transfers***
  - Transfers given in the form of goods and services rather than cash

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The Economic Life Cycle

- **Life cycle***
  - The regular pattern of income variation over a person's life
- Young adults have low incomes; incomes tend to rise and peak at around age 50; then fall sharply around age 65 when many people retire
- Causes inequality in the distribution of annual income
- May not represent true inequality in living standards

*Words accompanied by an asterisk are key terms from the chapter.

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Transitory versus Permanent Income

- **Permanent income***
  - A person's normal income
  - Normal, or average, income over several years
- Transitory changes need not affect standard of living
  - A family's ability to buy goods and services depends largely on its permanent income

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Economic Mobility

- Economic mobility
  - Movement of people among income classes
  - Some reflects transitory variation in income, others more persistent changes in income
  - Many of those below the poverty line are there only temporarily
    - Temporary poverty is more common than the poverty rate suggests, but persistent poverty is less common

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Intergenerational Mobility

- Persistence of economic success from generation to generation
- Millionaires
  - Four of five millionaires made their money on their own
- Intergenerational mobility
  - Varies from country to country
  - Negatively correlated with inequality

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21-2

The Political Philosophy of Redistributing Income

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Political Philosophy

- What should society do about economic inequality?
- Political philosophies of redistributing income
  - Utilitarianism
  - Liberalism
  - Libertarianism

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The Utilitarian Tradition (1 of 2)

- **Utilitarianism***
  - The political philosophy according to which the government should choose policies to maximize the total utility of everyone in society
- **Utility***
  - A measure of satisfaction
- Diminishing marginal utility
  - As a person's income rises, the extra well-being derived from an additional dollar of income falls

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The Utilitarian Tradition (2 of 2)

- Utilitarian case for redistributing income
  - Based on diminishing marginal utility
  - Extra dollar of income has more utility to poor person than to rich person
- Utilitarians do not advocate equalizing incomes
  - Would reduce total income of everyone due to incentive effects and efficiency losses
- Maximize total utility: Stops short of making society fully egalitarian

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The Liberal Contractarian Tradition (1 of 3)

- **Liberal contractarianism***
  - The political philosophy according to which the government should choose policies deemed just, as evaluated by impartial observers behind a “veil of ignorance”
- Society’s institutions, laws, and policies should be just

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The Liberal Contractarian Tradition (2 of 3)

- **Maximin criterion***
  - Claim that the government should aim to maximize the well-being of the worst-off person in society
  - Emphasizes the lot of the least fortunate, but it does not lead to a completely egalitarian society
  - Allows disparities in income if they improve incentives

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The Liberal Contractarian Tradition (3 of 3)

- Income redistribution is a form of social insurance
- **Social insurance***
  - Government policy aimed at protecting people against the risk of adverse events

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The Libertarian Tradition

- **Libertarianism***
  - The political philosophy according to which the government should punish crimes and enforce voluntary agreements but not redistribute income
- Libertarians focus on the process not outcome
  - Government should enforce individual rights, should try to equalize opportunities
  - If the income distribution is achieved fairly, government should not interfere, even if unequal

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21-3

Policies to Reduce Poverty

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Safety Net

- Government should provide a “safety net”
  - Poverty is associated with various economic and social ills
- Policies to reduce number of people living in poverty
  - Minimum-wage laws
  - Welfare
  - Negative income tax
  - In-kind transfers

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Minimum-Wage Laws

- Arguments for
  - Helps the working poor without any cost to government
  - Little impact on employment (inelastic demand)
- Arguments against
  - Elastic labor demand in the long run: high unemployment
  - Those helped by minimum wage are more likely to be teens from middle-income families than low-income adult workers

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Welfare (1 of 2)

- **Welfare***
  - Government programs that supplement the incomes of the needy
- Temporary Assistance for Needy Families (TANF)
  - Assists families with children and no adult able to support the family
- Supplemental Security Income (SSI)
  - Assists the poor who are sick or disabled

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Welfare (2 of 2)

- Critics
  - Programs create perverse incentives
  - Encourage families to break up
  - Encourage women to give birth out of wedlock
- Proponents
  - Being a poor, single mother on welfare is a difficult existence at best
  - Inflation-adjusted welfare benefits fell as single-parent families increased

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Negative Income Tax

- **Negative income tax***
  - A tax system that collects revenue from high-income households and gives subsidies to low-income households
  - Provides a universal basic income
- Earned Income Tax Credit (EITC)
  - Allows poor working families to receive income tax refunds greater than taxes paid during the year

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In-Kind Transfers

- Goods or services provided to the needy
  - Homeless shelters, soup kitchens
  - Supplemental Nutrition Assistance Program (SNAP): Gives low-income families a plastic card that can be used to buy food at stores
  - Medicaid: Government-provided healthcare for the poor
- An alternative: Cash payments
  - People buy what they most need; but critics argue could be used for drugs, alcohol

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Antipoverty Programs and Work Incentives (1 of 2)

- Many policies aimed at helping the poor have unintended effects
  - Discourage the poor from escaping poverty on their own
  - Very high effective marginal tax rates
  - Discourage families from working

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Antipoverty Programs and Work Incentives (2 of 2)

- Reduce the work disincentive of antipoverty programs
  - Reduce benefits to poor families more gradually as their incomes rise
  - “Workfare”: System requiring people to accept government jobs while collecting benefits
  - Provide benefits for only a limited period of time
  - 1996 welfare reform bill: 5-year lifetime limit

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21-4

Conclusion

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Conclusion

- Measuring inequality is difficult
- No broad consensus about what fairness means or how much government should redistribute income
- Government policies to partly equalize incomes may distort incentives, alter behavior, and make the allocation of resources less efficient
- Policymakers face a trade-off between equality and efficiency

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Think-Pair-Share Activity

Suppose a friend comments to you, “I think welfare recipients are simply lazy. I have a friend who receives Temporary Assistance for Needy Families and when she was offered a part-time job, she turned it down.”

A. What happens to a welfare recipient’s benefits if they increase their earnings?

B. What is the effective tax rate on their additional income if they were to lose $1 in benefits for each dollar of additional income?

C. How does this system affect a welfare recipient’s incentive to work? Are welfare recipients necessarily lazy if they turn down part-time jobs?

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Self-Assessment

- How can antipoverty programs discourage people from working? How might you reduce this disincentive? What are the disadvantages of your proposed policy?

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Summary

Click the link to review the objectives for this presentation.

Link to Objectives

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