



Understanding Economics

2nd Edition

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Chapter 7

Wages, Rent, Interest, and Profit

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Chapter Objectives (a)

In this chapter you will:

- consider how businesses choose the profit-maximizing amount of a resource they use when they are price-takers in the product markets in which they sell their products
- Look at the case where businesses are price-makers in their product markets and analyze the factors that change resource demand and affect the price elasticity of resource demand

Chapter Objectives (b)

continued...

- learn about the factors that affect wages, including productivity, education, experience, job conditions, regional disparities, market power, and discrimination
- look at the incomes from other resources—rent, interest, and profit

The Demand for Resources

- The demand for resources is based on the demand for the products they produce
- According to marginal productivity theory businesses use resources based on how much extra profit these resources provide
 - Three factors are important
 - a resource's marginal cost
 - a resource's marginal product
 - the marginal revenue of new units of output

A Product and Resource Price-Taker

- If a business is a price-taker in its product and resource markets
 - the resource's marginal cost is constant
 - the resource's marginal product varies
 - the marginal revenue of new units of output is constant

The Profit-Maximizing Employment Rule

- The profit-maximizing employment rule states that profits are maximized when marginal revenue product equals marginal resource cost
- marginal revenue product is the change in total revenue when employing a new unit of a resource
 - marginal resource cost is the change in total cost when employing a new unit of a resource

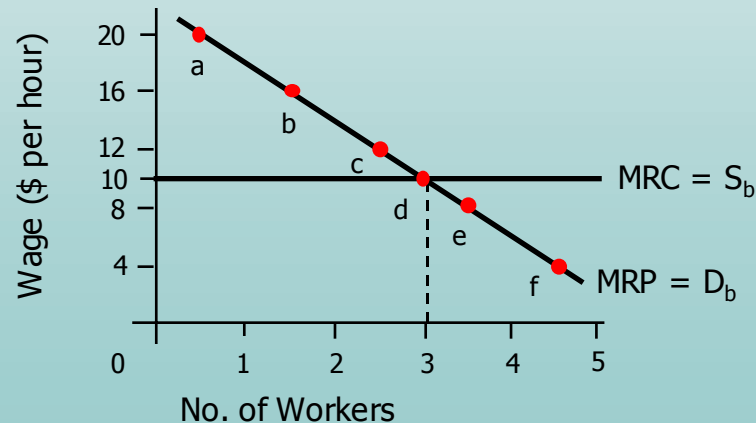
Labour Demand and Supply for a Product and Resource Price-Taker

Figure 7.1, Page 167

Labour Demand and Supply Schedules for a Strawberry Farm

Labour (L) (no. of workers)	Total Product (P) (q) (kilograms)	Marginal Product (MP) ($\Delta q/\Delta L$) (kilograms)	Output Price (P) (\$ per kilogram)	Total Revenue (TR) (P x q)	Marginal Revenue Product (MRP = ΔTR)	Marginal Resource Cost (MRC = W) (\$ per hour)
0	0	10	2	0	20 (a)	10
1	10	8	2	20	16 (b)	10
2	18	6	2	36	12 (c)	10
3	24	4	2	48	8 (e)	10 > (d)
4	28	2	2	56	4 (f)	10
5	30		2	60		

Labour Demand and Supply Curves for a Strawberry Farm



Market Demand and Supply

- In a competitive labour market
 - the market demand curve is found by horizontally summing the labour demand curves for all businesses in the industry
 - the market supply curve shows the total number of workers offering their services in this industry at each wage

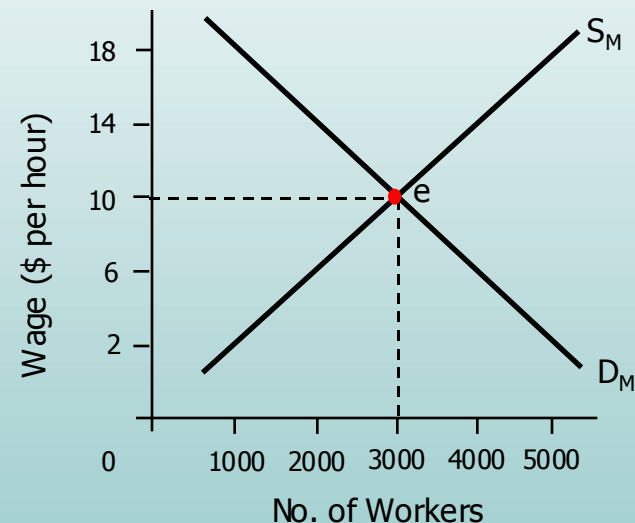
Demand and Supply in a Competitive Labour Market

Figure 7.2, Page 170

Labour Demand and Supply Schedules for Strawberry Farm Workers

Wage (W) (\$ per hour)	Labour Demanded (D_M)		Labour Supplied (S_M) (no. of workers) (market)
	(no. of workers) (farm)	(no. of workers) (market)	
18	1	1000	5000
14	2	2000	4000
10	3	3000	3000
6	4	4000	2000
2	5	5000	1000

Labour Demand and Supply Curves for Strawberry Farm Workers



A Product Price-Maker/ Resource Price-Taker

- If a business is a price-maker in its product market and a price-taker in its resource market
 - the resource's marginal cost is constant
 - the resource's marginal product varies
 - the marginal revenue of the new units of output falls as quantity rises

Labour Demand and Supply for a Product

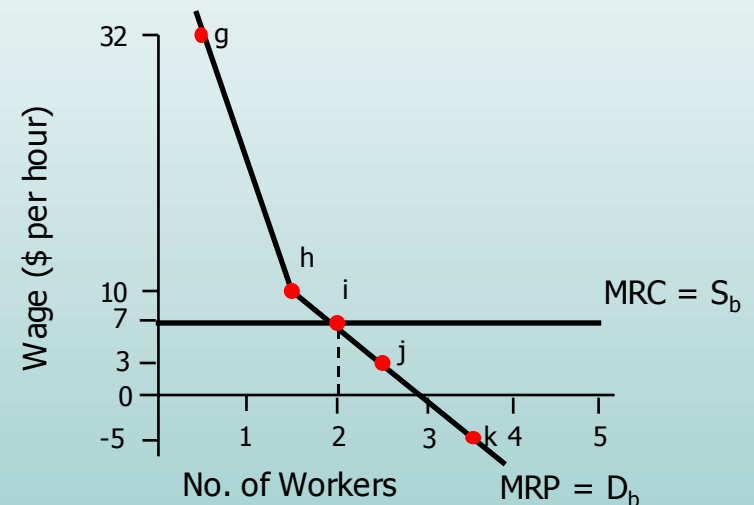
Price-Maker/Resource Price Taker

Figure 7.3, Page 172

Labour Demand and Supply Schedules for Nirvana Cushions

Labour (L) (no. of workers)	Total Product (P) (q) (no. of cushions)	Marginal Product (MP) ($\Delta q/\Delta L$) (no. of cushions)	Output Price (P)	Total Revenue (TR) (P x q)	Marginal Revenue Product (MRP = ΔTR)	Marginal Resource Cost (MRC = W) (\$ per hour)
0	0	4	10	0	32 (g)	7
1	4	3	8	32	10 (h)	7 > (i)
2	7	2	6	42	3 (j)	7
3	9	1	5	45	-5 (k)	7
4	10		4	40		

Labour Demand and Supply Curves for Nirvana Cushions



Changes in Resource Demand

- Three factors can cause changes in resource demand
 - product demand
 - other resource prices
 - an increase in a complementary resource's price causes a decrease in demand (and vice versa)
 - an increase in a substitute resource's price causes an increase in demand (and vice versa)
 - technological innovation

Price Elasticity of Resource Demand

- Four factors can affect the price elasticity of resource demand
 - the rate of decline in marginal product
 - the price elasticity of product demand
 - the proportion of total costs
 - the availability of substitute resources

Wage Determinants (a)

- There are seven main wage determinants
 - labour productivity
 - education
 - experience
 - job conditions
 - regional disparities
 - market power
 - discrimination

Distribution of Earnings (1997)

Figure 7.4, Page 176

Earnings	Percentage of All Earners
Under \$5000	14.5
\$5000 - \$9999	10.9
\$10 000 - \$14 999	9.7
\$15 000 - \$19 999	8.3
\$20 000 - \$24 999	9.0
\$25 000 - \$29 999	8.5
\$30 000 - \$34 999	8.1
\$35 000 - \$39 999	6.5
\$40 000 - \$44 999	5.6
\$45 000 - \$49 999	3.9
\$50 000 - \$49 999	6.6
\$60 000 and over	8.3
	<hr/>
	100.0

Education

- Education
 - usually adds to a worker's pay but has opportunity costs as well
 - serves two main purposes (consumption and investment in human capital)
- A student will undertake an educational program if its benefits (both monetary and nonmonetary) exceed its opportunity costs

Education and Average Family Income (1997)

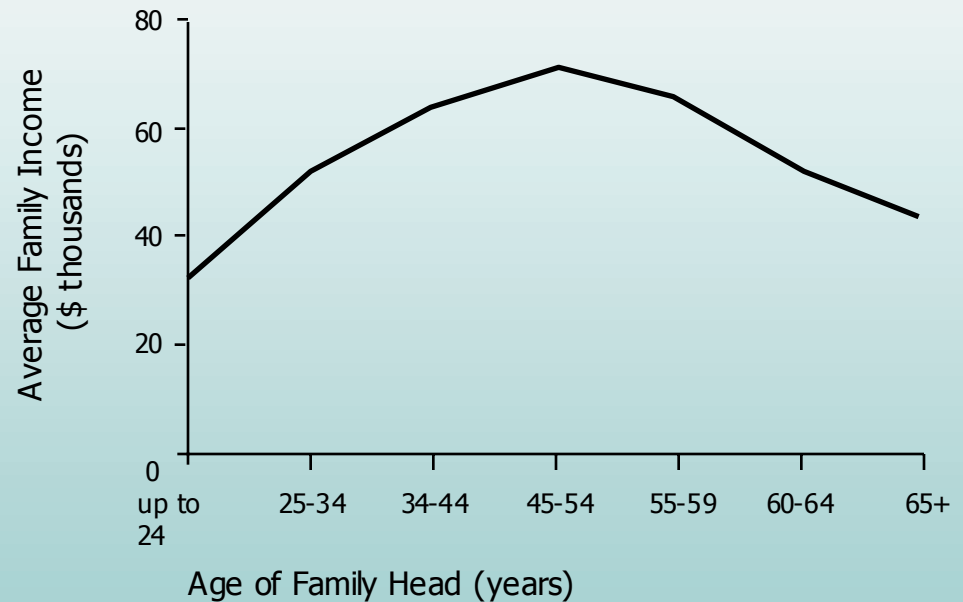
Figure 7.5, Page 177

Education	Average Family Incomes
University Degree	\$82 570
Post-secondary diploma	58 566
Some post-secondary	52 942
High school graduate	53 456
Some high school	47 358
0 to 8 years of school	39 633

Age and Average Family Income (1997)

Figure 7.6, Page 179

Age of Family Head (years)	Average Family Income
up to 24	\$33 989
25-34	51 730
35-44	61 047
45-54	68 824
55-59	63 699
60-64	53 013
65+	43 351



Labour Unions

- There are two main types of labour unions
 - industrial unions include all workers in a certain industry
 - craft unions include workers in a particular occupation and restrict who can be members

Job Discrimination

- Job discrimination can take two main forms
 - direct job discrimination is the payment of individuals different amounts for substantially the same work
 - a discriminatory division of jobs (e.g. secretaries and warehouse clerks)

Rent

- Rent is the payment for the use of a productive resource available in only a fixed amount
 - land receives a rent because its supply is perfectly elastic
 - the equilibrium rent for a particular type of land varies with demand for this land (e.g. a rise in the price of beef affects the rent for ranching land)

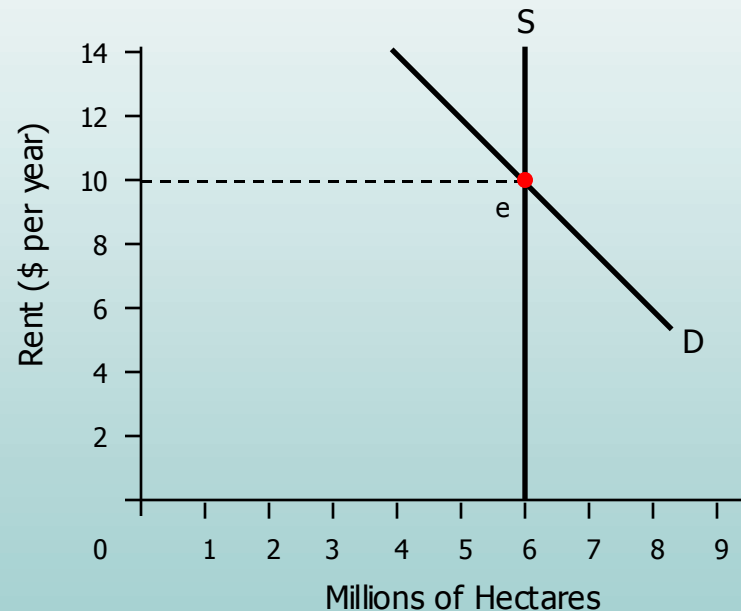
Equilibrium in the Market Land

Figure 7.7, Page 181

Demand and Supply Schedules for land

Rent (\$ per year)	Quantity Demanded (D) (millions of hectares)	Quantity Supplied (S)
14	4	6
12	5	6
10	6	6
8	7	6
6	8	6

Demand and Supply Curves for Land



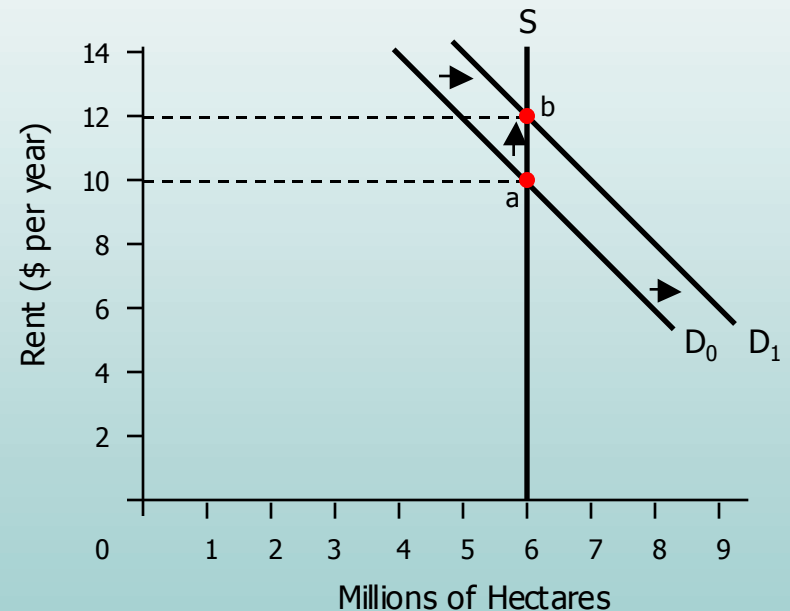
Changes in the Demand for Land

Figure 7.8, Page 182

Demand and Supply Schedules for land

Rent (\$ per year)	Quantity Demanded		Quantity Supplied (S)
	(D ₀)	(D ₁)	
	(millions of hectares)		
14	4	5	6
12	5	6	6
10	6	7	6
8	7	8	6
6	8	9	6

Demand and Supply Curves for Land



Interest

- Interest is related to the supply of capital resources, and can also be viewed as a financial income.
- When money is lent, the lender requires repayment not only of the loan principal but also a charge for the use of the money.
- Interest is payment for the opportunity cost of the money being used.

The Range of Interest Rates

- Four factors affect interest rates
 - credit risk
 - the loan period
 - collateral
 - the size of the loan

Profit

- Critics of capitalism attribute profit to the power of business owners rather than to their contributions to the economy.
- Profit can also be seen as a return to entrepreneurs for their risk-taking. From this perspective, it is an essential private incentive for taking risks.

Reaping the Rewards

- David Ricardo developed a theory of rent based on varying grades of land
- According to his theory a rise in the demand for wheat increases wheat prices and increases rent as poorer land is brought into cultivation
- He predicted that higher wheat prices would lead to higher money wages and lower profits

Ricardo's Theory of Rent

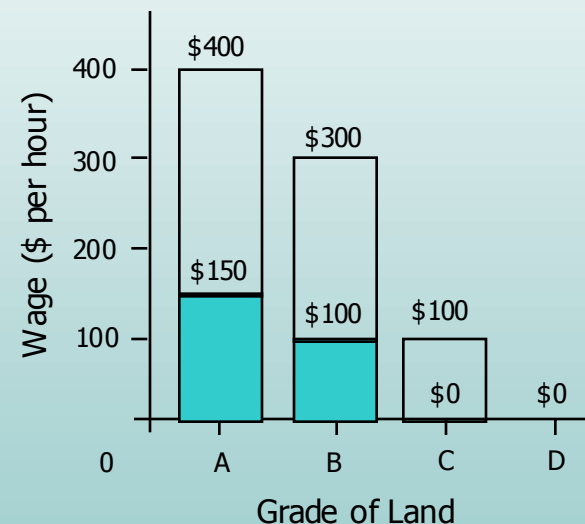
Figure A, Page 189

Land Rents per Hectare

(when production costs are \$100 per hectare)

Wheat Price (\$)	Grade A (50 kg output)	Grade B (40 kg output)	Grade C (20 kg output)	Grade D (10 kg output)
5	150 [(\$5 x 50) - \$100]	100	0	not cultivated
10	400 [(\$5 x 50) - \$100]	300	100	0

Land Rents per Hectare



The Role of Labour Unions (a)

- Unions represent members' interests through collective bargaining. Both unions and employers make collective agreements which bind both parties for a given period.
- When agreement is impossible, mediation or arbitration can be used to bring about a settlement

The Role of Labour Unions (b)

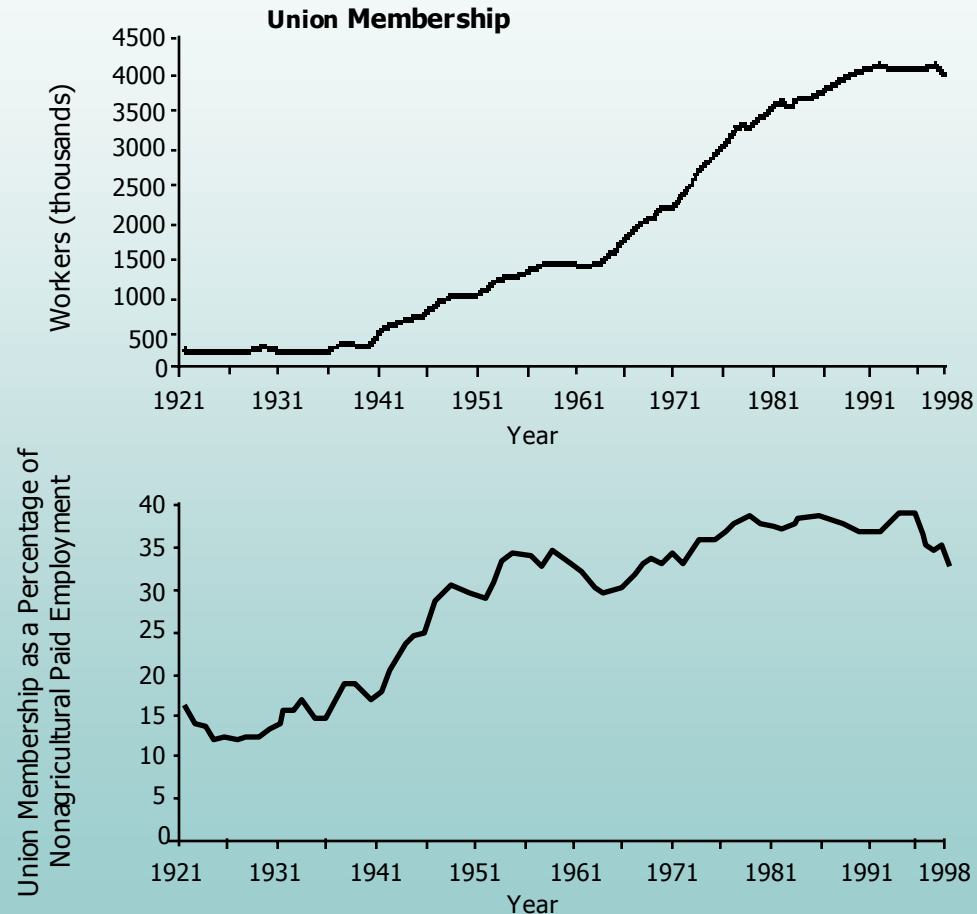
- If no settlement is reached, union members can work to rule, or stage a strike.
- Employers may use a lockout to bring about a settlement.

Unions and the Canadian Economy (a)

- Union membership has grown in the past 70 years, but as a proportion of the total labour force this growth has stagnated during the past quarter century.
- Unionization rates vary significantly by industry, with male-dominated occupations have a slightly higher rate than female-dominated occupations.

Union Membership in Canada

Figure A, Page 192



Union Membership by Industry and Gender

Figure B, Page 193

Industry (1999)	Percentage of Paid Workers Who Are Union Members
Education Services	73.6
Public Administration	70.0
Health Care	54.7
Transportation	44.4
Manufacturing	33.7
Trade	13.9
Finance	9.7
Agriculture	3.8
Gender (1995)	
Men	34.4
Women	30.0



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Chapter 7 **The End**

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