

## Other Topics Relating to Resource Demand

### Product Price-Maker/Resource Price-Taker

What happens to resource demand if the business is a monopolist or an imperfect competitor in its product market? In these cases, the business has some control over the price of its product, which means it is a product price-maker. To see how the business's resource demand curve is determined in this case, let us assume that the labour market is perfectly competitive, making the business a resource price-taker.

Consider the case of Nirvana Cushions, a small manufacturer that is a price-maker in the output market, where it sells its product and hires unskilled workers in a competitive labour market. Nirvana Cushions decides how many workers to hire by using the concept of marginal revenue product. However, unlike a price-taker in output markets, Nirvana faces a product demand curve with a negative (downward) slope. As the business increases its output of cushions, the price it can charge for each cushion falls.

### MARGINAL REVENUE PRODUCT

As with the strawberry farmer, Nirvana Cushions must first find the total product and marginal product of each new worker. Again, we will assume that marginal product begins to decline with the very first worker. Figure 7.8 shows the results in table columns 1 to 3. So, while the marginal product of the first worker is 4 ( $4 - 0$ ), the marginal product of the second worker is 3 ( $7 - 4$ ).

Next, the business must find the marginal revenue of each new worker. Because the business is a price-maker in its product market, the price is not constant at all quantities of output. So, for example, Nirvana Cushions finds that there is sufficient demand to produce four cushions per hour if they sell at a price of \$8 each, but demand dictates that if seven cushions are produced per hour, they would have to sell at a price of \$6 each. The possible prices for each output level are shown in column 4 in Figure 7.8. Column 5 shows the resulting total revenues (total product multiplied by price). The change in total revenue from one production level to the next, the marginal revenue product, is shown in column 6. Expressed on a graph, the marginal revenue product figures give the marginal revenue product curve. So, the business has a total revenue of \$32 ( $4 \times \$8$ ) when employing one worker and \$42 ( $7 \times \$6$ ) when employing two workers. The marginal revenue of the second worker, therefore, is \$10 ( $\$42 - \$32$ ), shown on the graph as point *h*.

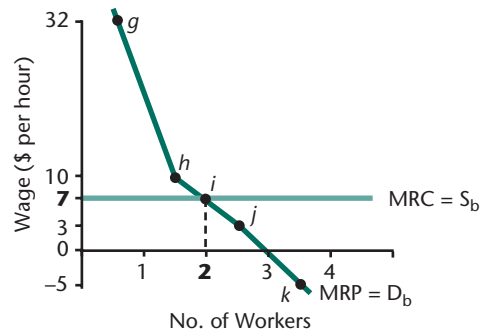
The distinguishing feature of the marginal revenue product curve of a business that has some power to set product prices is that it is less elastic than that for a perfect competitor, which is a price-taker. At Nirvana Cushions' higher employment levels, for example, the marginal revenue product falls for two reasons. Not only does the marginal product of labour decrease but also the price that the business can charge for its product as production increases.

### LABOUR DEMAND AND SUPPLY

Recall that the profit-maximizing employment rule applies to all businesses, regardless of their power in the product and resource markets. This means that once Nirvana Cushions knows its marginal revenue product, it can determine its profit-maximizing employment level. According to the rule, the business should employ a resource up to the point where the marginal revenue product of the resource equals its marginal resource cost. Recall that Nirvana Cushions is assumed to be a wage-taker in a competitive labour market, where individual employers have no influence. Suppose the prevailing wage for unskilled workers is \$7 per hour. Given this wage, Nirvana Cushions

**Figure 7.8** Labour Demand and Supply for a Product Price-Maker/Resource Price-Taker

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

**Labour Demand and Supply Curves for Nirvana Cushions**

The business's demand for labour ( $D_b$ ) is again found by calculating the marginal revenue product (MRP), or the change in the business's total revenue from hiring each new worker. The business's supply curve for labour ( $S_b$ ) is the marginal resource cost (MRC) of new workers. Given that workers can be hired at a constant wage,  $S_b$  is a horizontal line, and the business's profit-maximizing employment level of labour is at point  $i$ .

will hire two workers, since each provides a higher marginal revenue product than their \$7 marginal resource cost. As before, the marginal revenue product curve is the business's labour demand curve ( $D_b$ ), and the horizontal marginal resource cost curve is the business's labour supply curve ( $S_b$ ). The profit-maximizing employment level occurs at point  $i$ , where the two curves intersect in Figure 7.8.

### MARKET DEMAND AND SUPPLY

If the resource market is competitive, the degree of competition in the product market does not affect how the market demand for a resource is determined. Therefore, Nirvana Cushions' demand for unskilled workers is combined with all other businesses' demand for unskilled workers to find the market demand. As with the market for farm workers, the supply of unskilled workers will have a positive (upward) slope. Once again, the intersection of the demand curve and the supply curve gives the equilibrium point for the labour market.

**Labour Demand and Supply Schedules for a Salmon Fisherman**

(1) Labour (no. of workers)	(2) Total Product (kilograms per hour)	(3) Marginal Product (kilograms per hour)	(4) Product Price (\$ per kilogram)	(5) Total Revenue (\$ per hour)	(6) Marginal Revenue Product (\$ per hour)
0	0	—	\$5.00	\$___	\$___
1	16	—	4.50	___	___
2	28	—	4.00	___	___
3	37	—	3.50	___	___
4	44	—	3.00	___	___
5	47	—	2.50	___	___

The fisherman [in question 2 of the textbook] begins to sell his product in an imperfectly competitive market, as shown in the table above.

- Copy and complete the table, showing the supply and demand schedule, and on a sheet of graph paper, draw the fisherman's new labour demand curve.
- Why does the curve you have drawn in part a. differ from the labour demand curve found in the previous question?
- How many full-time boat-hands will the fisherman employ at an hourly wage of \$10? at an hourly wage of \$29? Explain these answers using the profit-maximizing employment rule and your graph.

## Power in Numbers

### The Role of Labour Unions in Canada

At the beginning of this chapter, we looked at cases in which the resource market is competitive, with many individual buyers and sellers. Because each competitive participant is small in comparison with the market, no single business has an effect on the price of a resource, and businesses are price-takers. In some resource markets, however, competition does not prevail. Most commonly, this arises through the efforts of workers to use their collective power through unions and professional organizations to negotiate with employers.

#### The Collective Bargaining Process

The impact of Canadian labour unions is considerable. Their influence in particular labour markets extends not only to wage rates but also to working hours, workplace standards, and employment levels. Unions represent the interests of their members primarily through collective bargaining, whereby union representatives negotiate with employers over such issues as workers' wages, hours, and working conditions. As a result of collective bargaining, unions and employers make collective agreements, to which both parties are bound for a set period of time. Unions also become involved in disputes over, for example, worker suspensions. Generally, unions and employers come to a settlement through face-to-face bargaining.

#### Mediation and Arbitration

When unions and employers cannot come to an agreement, they may seek help through a process known as mediation. An outside party known as a mediator is appointed, usually with the help of government officials. After studying the positions and proposals of union and management, the mediator makes a series of recommendations that each side is free to accept or reject.

Disputes are sometimes settled through a similar procedure called arbitration. Like a mediator, an arbitrator is an outside party, typically appointed with government help. However, the

decision of an arbitrator is binding on both parties; they must accept the settlement.

#### Working to Rule

If no settlement is reached, a union may elect to use a tactic called working to rule, whereby union members work strictly within the bounds of their job descriptions. In a work-to-rule campaign, workers slow down normal operations but continue to receive their pay. However, they refuse to work overtime or do anything else that is not strictly required by their jobs. A successful work-to-rule campaign pressures the employer to return to the bargaining table.

#### Strikes

Unions may also elect to stage a strike against the employer by effectively ceasing work. Usually, a strike forces a business to shut down, thereby pressuring management to resume bargaining. Unions, too, are under pressure as their members have no income except for payments from any strike funds amassed through their members' union dues or membership payments. Sometimes, unions will hold rotating strikes, with groups of workers striking for set periods of time in order to slow down work. During strikes, union members typically picket the workplace by taking strategic positions around the outside of the workplace. They may try to turn back customers, employees who are still working, and delivery people transporting goods to or from the business.

#### Lockouts and Replacement Workers

Employers may elect to use a lockout to speed a settlement by literally locking union employees out of the workplace and temporarily stopping work. As in the case of strikes, both sides are affected by this action: the business usually ceases operations and employees lose their incomes. In some cases, businesses that lock out employees or who have striking employees may hire replacement workers (sometimes called "scabs" by unions) to carry out the duties of permanent employees. While they can serve as powerful weapons, lockouts and replacement labour poison relations between the company and its regular employees, as well as create antagonism between the regular and the replacement workers.

## Unions and the Canadian Economy

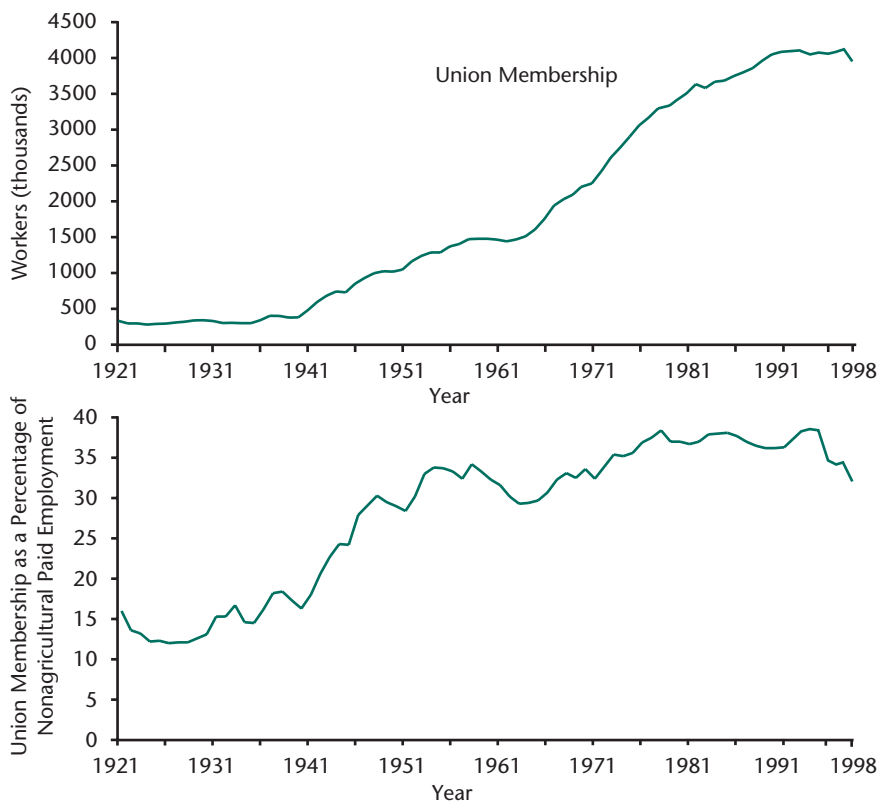
Since the 1930s, when only one out of five Canadian workers was unionized, labour unions have grown in membership. Unions now represent three out of 10 of Canada's paid nonagricultural workers. As shown in Figure A, union membership rose substantially as a percentage of these workers during the 1940s and early 1950s. Growth declined in the late 1950s and 1960s, as most workers in easily organized manufacturing sectors were already members. Because of the growth in Canada's expanding public sector in the early 1970s, membership rose rapidly. Since the mid-1980s, relative to the total number of workers, membership has decreased slightly.

The recent stagnation in union membership results primarily from the shift of Canada's workforce from the unionized manufacturing

sector to less-unionized service industries. As shown in Figure B, the role of unions in Canadian service industries varies enormously. Unions are even more prevalent in public administration, education, and transportation than they are in manufacturing. However, there are many service industries—for example, those connected with trade and finance—in which union representation is scanty, and it is in such sectors that significant new employment has been created.

There is also a slight difference in union representation based on the gender of workers, as illustrated in Figure B. Male workers dominate many manufacturing jobs, while women are better represented in expanding service industries. Hence, it is no surprise that the percentage of men who are union members is higher than that of women.

**Figure A** Union Membership in Canada



In general, the number of workers in Canada who are union members has grown steadily, as shown on the top graph. The proportion of Canadian workers—other than agricultural workers—who are union members has also risen, as shown on the bottom graph. From a low point of 12 percent in 1926, the proportion rose to its highest point of 38.8 percent in 1984.

Sources: Adapted from F.H. Leacy, ed., *Historical Statistics of Canada, 2nd ed.* (Ottawa: Statistics Canada, 1983), pp. 175–77; Labour Canada, *Directory of Labour Organizations in Canada, 1994–95*, cat. no. L2-2-1995, p. 15. Reproduced by authority of the Minister of Industry, 2004. (Visit the Statistics Canada web site at <http://www.statcan.ca>)

**Figure B** Union Membership by Industry and Gender (2002)

	Percentage of Paid Workers Who Are Union Members
<b>Industry</b>	
Educational services	73.8
Public administration	72.1
Health care and social assistance	56.5
Transportation and warehousing	43.7
Manufacturing	32.4
Trade	14.1
Finance, insurance, real estate and leasing	10.7
Agriculture	4.0
<b>Gender</b>	
Men	32.3
Women	32.0

Union membership is most prevalent in education and public administration, while agriculture has the lowest percentage of union members. Men are slightly more likely to be union members than women.

Source: "Union Membership by Industry and Gender," from the Statistics Canada CANSIM database <http://cansim2.statcan.ca/cgi-win/CNSMCGI.EXE> Table 282-0078

Studies suggest that wages in unionized occupations tend to exceed those in nonunionized occupations by about 10 to 25 percent. Unions do increase wages in unionized labour markets. However, workers who cannot find employment in unionized occupations crowd into nonunionized trades. Because the supply of labour increases in these labour markets and

because workers lack the market power that unions would otherwise give them, employers are able to pay lower wages. Therefore, unions influence wages in both unionized and nonunionized occupations. Meanwhile, the extent to which union activity increases *average* wages in the entire Canadian economy is a subject of continuing controversy.

1. Outline the advantages and disadvantages of the following options for settling disputes. In your answer, keep in mind the interests of workers, employers, and the general public.
  - a. Appointment of an arbitrator, with no right to strike or work to rule for union members
  - b. Appointment of a mediator, with the right to strike for union members
  - c. Appointment of a mediator, with no right to strike, but the right to work to rule for union members
2. Which of the options in the previous question would you choose in the cases below? Explain your answer for each.
  - a. A dispute involving a proposed pension scheme for retail workers
  - b. A dispute involving proposed higher salaries for police
3. (Policy Discussion Question)
  - a. According to the online article *Whither the Trade Unions?* (at [http://oldfraser.lexi.net/publications/forum/2000/02/section\\_09.html](http://oldfraser.lexi.net/publications/forum/2000/02/section_09.html)), why has there been a decrease in the proportion of Canada's labour force that is unionized?
  - b. In what sector of the economy are Canadian unions increasingly concentrated?
  - c. Do you believe that the decline in the importance of trade unions is good or bad for Canadian workers? Explain.
  - d. Based on your answer in part c., should government attempt to increase the level of unionization in the Canadian economy?



[http://www.oldfraser.lexi.net/publications/forum/2000/02/section\\_09.htm](http://www.oldfraser.lexi.net/publications/forum/2000/02/section_09.htm).