

## **CHAPTER 5    Quasi-Fixed Labor Costs and Their Effects on Demand**

In addition to the questions below, solve the following end of chapter problems:

Review questions 1-8; Problems 5, 6, 8.

1. Suppose that workers can go to firms without training and earn \$20,000 per year for the remainder of their work life (suppose that is 20 years). Assume a zero interest rate. Further, suppose that YUKON provides firm specific training at a cost of \$10,000 in the first year and the worker produces nothing during that first year. The training will increase the worker's productivity to \$21,000 in years 2-20.

- a. If Yukon pays workers \$20,000 per year for 20 years and can force workers to stay for the 20 years, should it hire and train more or less workers? why?
  - b. If Yukon cannot force workers to stay for the 20 years, how could it structure pay to increase the chance that the worker will stay?
  - c. Why might employees be reluctant to accept the kind of pay system described in b?
  - d. If the training provided by Yukon was **general** instead of **firm specific**, how much could Yukon pay the worker in period 1 if it is to break even on the worker and can't force the worker to stay? Explain.
2. Explain why workers with firm specific training would be less likely to be laid off when there is a downturn in demand for the employer's product.

### Multiple-Choice

1. A quasi-fixed cost of labor is a cost that
  - A) is expected to change over time.
  - B) is proportional to the number of hours worked.
  - C) is proportional to the number of workers hired.
  - D) is proportional to the amount of capital used.
2. Which of the following is definitely NOT a quasi-fixed cost of labor?
  - A) unemployment insurance
  - B) health insurance
  - C) overtime pay
  - D) vacation pay
3. An increase in quasi-fixed costs would probably lead to a(n) \_\_\_\_\_ in the number of employees hired and a(n) \_\_\_\_\_ in the number of overtime hours worked.
  - A) increase; decrease
  - B) increase; increase
  - C) decrease; decrease
  - D) decrease; increase
4. A mandated increase in overtime pay is likely to
  - A) cause employers to reduce overtime hours and convert them into added employment.
  - B) directly reduce the quasi-fixed costs per worker.
  - C) lead to a reduction in employment if higher costs cause a large scale effect.
  - D) lead to a reduction in employment if those who work overtime and those who are unemployed are perfect substitutes.
5. A mandated increase in overtime pay is likely to
  - A) raise the average costs of labor, even if all overtime hours were eliminated.
  - B) cause an increase in labor hours due to the scale effect.
  - C) cause employers to increase straight-time hourly wages to compensate (because of the "package" agreed upon).
  - D) cause an increase in labor hours due to the substitution effect.
6. Use of temporary-help agencies
  - A) increases employees' costs associated with searching for and applying for available temporary openings.
  - B) increases the quasi-fixed costs of hiring temporary workers.
  - C) is more common when firms can build up inventories.
  - D) requires employers to pay more per hour than if they hired the worker directly.
7. Legislation requiring employer-provided health insurance for part-time workers would probably \_\_\_\_\_ the employment of part-time workers and \_\_\_\_\_ the overtime of full-time workers.
  - A) increase; increase
  - B) increase; decrease
  - C) decrease; increase
  - D) decrease; decrease

8. If a firm offers specific training to its workers, when the training is over,
  - A) workers will most likely be paid a wage that is equal to their marginal product.
  - B) workers will most likely be paid a wage that is greater than their marginal product, to compensate for the training.
  - C) workers will most likely be paid a wage that is less than their marginal product.
  - D) workers will most likely be paid a wage that is less than their wage before training.
9. If reserve clauses were outlawed in major-league baseball,
  - A) major league teams would have less incentive to train minor league players.
  - B) minor league players would be paid more.
  - C) players in the major leagues would be paid less than their marginal product.
  - D) players in the major leagues would be paid more than their marginal product.
10. Workers with firm-specific training are \_\_\_\_\_ likely to be laid off than are workers with general training because \_\_\_\_\_.
  - A) more; they are paid less than workers with general training.
  - B) more; their wage is less than their marginal product.
  - C) less; they are paid less than workers with general training.
  - D) less; their wage is less than their marginal product.
11. Employment-at-will means that
  - A) employees have the right to be hired for any job they desire.
  - B) employees have the right to be hired at any job for which they are qualified.
  - C) employers must have a "just reason" to fire an employee.
  - D) both employees and employers have the right to terminate employment at any time, for any reason.
12. Policies which protect workers against "unjust dismissal " have been shown to cause
  - A) decreased employment levels and increased hour fluctuations.
  - B) increased employment levels and decreased hour fluctuations.
  - C) increased employment levels and increased hour fluctuations.
  - D) decreased employment levels and decreased hour fluctuations.

Table 5-1: Two-Period Training Model

W0 = wage in first period

W1 = wage in second period

MP0 = marginal product of labor in first period

MP1 = marginal product of labor in second period

MP\* = marginal product of labor in other jobs

Z = cost of training

W\* = market wage for firms offering single period jobs

13. A profit-maximizing firm which wants to provide firm-specific training to its workers will pay \_\_\_\_\_ in the training period and \_\_\_\_\_ after training is completed. (See Table 5-1 for definitions of abbreviations.)
  - A) W\*, W\*
  - B) more than W\*; more than W\*
  - C) less than W\*; less than MP1
  - D) more than MP\*; more than MP\*
14. A profit-maximizing firm which wants to train its workers during the first period CANNOT (see Table 5-1 for definitions of abbreviations)
  - A) equate the present value of the marginal product of labor to the present value of expenditures.
  - B) allow  $W0 + Z - MP1$  to be greater than zero.
  - C) allow W1 to be greater than MP1.
  - D) allow Z to be greater than W0.

15. The present value of a firm's earnings over two periods is equal to its earnings in the initial period plus the \_\_\_\_\_ value of its earnings in the next period, and will \_\_\_\_\_ as the interest rate rises.
- A) discounted; rise
  - B) discounted; fall
  - C) future; rise
  - D) future; fall
16. General training is usually paid for by
- A) the employer.
  - B) the employee.
  - C) both the employer and the employee.
  - D) neither the employer nor the employee.
17. Specific training is paid for by
- A) the employer.
  - B) the employee.
  - C) both the employer and the employee.
  - D) neither the employer nor the employee.
18. After general training, the employee's wage will be
- A) equal to his or her marginal product of labor.
  - B) greater than his or her marginal product of labor, due to the training received.
  - C) less than his or her marginal product of labor, to pay for the cost of the training received.
  - D) either greater or less than his or her marginal product of labor.
19. During a recession, average labor productivity tends to decrease because output falls and
- A) prices also fall.
  - B) workers with specific training are not laid off.
  - C) workers with general training are not laid off.
  - D) neither workers with general training nor workers with firm-specific training are laid off.
20. A firm could profitably pay for a worker's general training if
- A) the worker could change jobs easily.
  - B) the worker was nearing retirement.
  - C) the training program would also serve as a screening device.
  - D) the training increased the quasi-fixed costs of hiring the worker.
21. The use of an internal labor market implies that
- A) workers in lower-level jobs will become less motivated and less dependable.
  - B) workers at the firm have no firm-specific training.
  - C) most upper-level jobs will be filled by promoting current workers.
  - D) the firm relies exclusively on credentials.
22. All else equal, a firm will prefer to hire a worker who will
- A) stay at the firm for a long period of time.
  - B) stay at the firm for a short period of time.
  - C) be willing to work only a limited number of hours.
  - D) acquire firm-specific training from another firm.
23. Statistical discrimination is
- A) using statistics to judge the average characteristics of a group of workers.
  - B) judging one person according to a group to which he or she belongs.
  - C) using statistics in hiring.
  - D) firing people due to low average productivity.

24. In Japan workers receive \_\_\_\_\_ rates of formal training than in the United States and this leads to \_\_\_\_\_ quit rates.
- A) higher; lower
  - B) higher; higher
  - C) lower; lower
  - D) lower; higher
25. Training costs
- A) exclude opportunity costs of trainees' time.
  - B) arise mostly from out-of-classroom training.
  - C) exclude the opportunity cost of using capital equipment.
  - D) exclude opportunity costs of trainers' time.

## Answers

MC answers: 1c, 2c, 3d, 4c, 5a, 6d, 7c, 8c, 9a, 10d, 11d, 12a, 13c, 14c, 15b, 16b, 17c, 18a, 19b, 20c, 21c, 22a, 23b, 24a, 25b.

## ■ Answers to Even-Numbered Review Questions

2. Why do upward-sloping labor supply curves to firms cause the marginal expense of labor to exceed the wage rate?

**Answer:** With upward-sloping labor supply curves, firms wanting to increase their number of employees must increase the wage offers for both their added workers and their existing workers. Thus, the marginal expense of labor exceeds wages paid to the added workers.

4. “Minimum wage laws help low-wage workers because they simultaneously increase wages and reduce the marginal expense of labor.” Analyze this statement.

**Answer:** This statement has two aspects. First, minimum wage laws *can* increase wages and reduce the marginal expense of labor if the labor market is characterized by monopsonistic conditions *and the minimum wage increases are not “too large”* (that is, they do not impose a wage higher than the pre-existing marginal expense of labor). Second, however, these changes can only help workers if the higher wage bills faced by employers do not drive their employers out of business.

6. Workers in a certain job are trained by the company, and the company calculates that to recoup its investment costs the workers’ wages must be \$5 per hour below their marginal productivity. Suppose that after training, wages are set at \$5 below marginal productivity, but that developments in the product market quickly (and permanently) reduce marginal productivity by \$2 per hour. If the company does not feel it can lower wages or employee benefits, how will its employment level be affected in the short run? How will its employment level be affected in the long run? Explain, being sure to define what you mean by short run and long run!

**Answer:** In the short run (that is, when training investments have already been concluded, so all that is variable is the employment levels of trained workers), marginal revenue product still exceeds wages by \$3 per hour, so it is advantageous for the company to continue employing workers it has already trained. The company is not making back enough to make the training a good investment, but making back \$3 per hour is better than laying off the workers and making back nothing! Thus, workers will not be laid off.

In the long run (that is, when the company is deciding about investing in *new* workers), the \$3 payback per hour is not sufficient to justify the training investment if wages remain as they are. Thus, the firm will not hire and train new workers under the current circumstances. Employment will fall as the firm fails to replace those who leave, and the decline in employment will eventually serve to raise the marginal productivity of labor. The decline in employment will stop when the marginal revenue product of labor is once again \$5 greater than the wage rate.

8. The manager of a major league baseball team argues: “Even if I thought Player X was washed up, I couldn’t get rid of him. He’s in the third year of a four-year, \$24 million deal. Our team is in no position to eat the rest of his contract.” Analyze the manager’s reasoning using economic theory.

**Answer:** The manager is ignoring the fact that the cost of the player will be \$24 million over the period whether the player is on the team or not. Teams are always better off maximizing profits, even if they are losing money under their current conditions, and the team may be able to generate more profits if it replaces Player X. The condition for replacement is that the difference between the marginal revenue product of the new player and that of Player X exceeds the salary of the new player (the marginal expense of continuing Player X is zero).

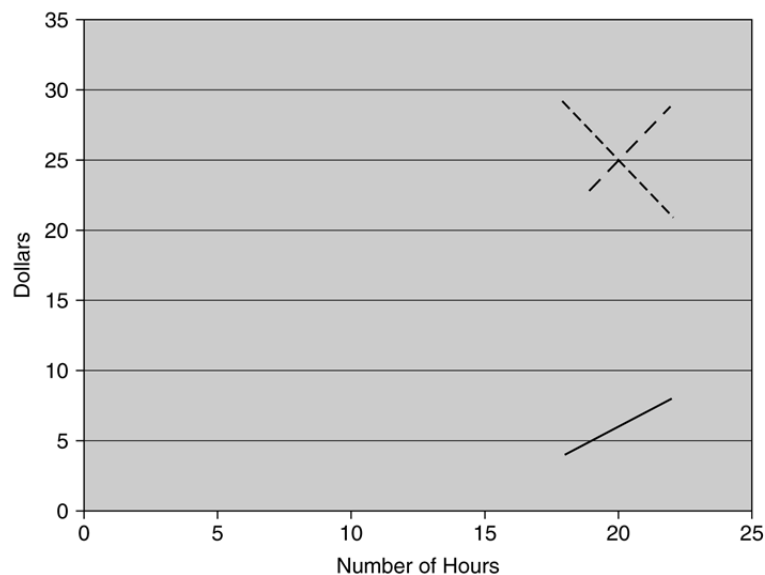


## ■ Answers to Even-Numbered Problems

6. Teddy's Treats, the dog biscuit company in Problem 5, has the following marginal revenue product of labor ( $MRP_L$ ):

| Number of Hours | $MRP_L$ |
|-----------------|---------|
| 18              | 29      |
| 19              | 27      |
| 20              | 25      |
| 21              | 23      |
| 22              | 21      |

- a. Add the marginal revenue product curve to the drawing in Problem 5.  
 b. If Teddy's Treats is maximizing profits, how many hours of labor will be hired? What wage will be offered?



**Answer:** a.

- b. The profit-maximizing number of hours is 20 and Teddy's Treats will offer a wage of \$6 per hour.

8. Suppose the marginal expense of hiring another worker is \$150 and the marginal expense of hiring current workers for an extra hour is \$10. The added output associated with an added worker, holding both capital and average hours per worker constant, is 120. The added output generated by increasing average hours per worker, holding capital and the number of employees constant, is 7. If the firm is interested in maximizing profits, what should it do?

**Answer:** For profits to be maximized, the following condition must hold:

$$ME_M/MP_M = ME_H/MP_H$$

With this firm,  $ME_M/MP_M = 150/120 = 1.25$  and  $ME_H/MP_H = 10/7 = 1.43$ .

Since the cost of an added unit of output produced by hiring more workers is less than the cost of an added unit of output produced by hiring workers for more hours, the firm should hire more workers and have each worker work fewer hours.

