

Chapter 18

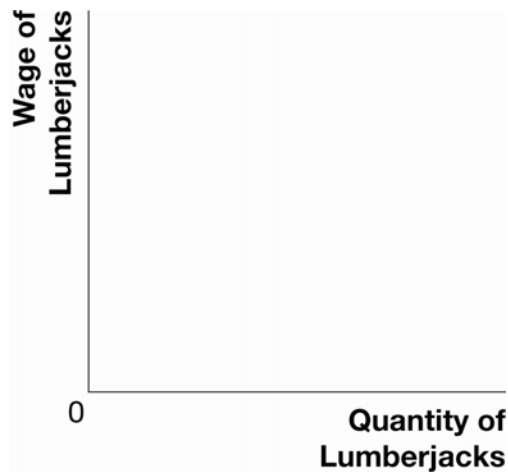
- Suppose that labour is the only variable input in the production process for a competitive profit-maximizing firm that produces coffee mugs. The firm's production function is shown below.

Labour (number of workers)	Output per Hour	Marginal Product of Labour	Value of MPL when $P = €3$	Value of MPL when $P = €5$
0	0			
1	9	_____	_____	_____
2	17	_____	_____	_____
3	24	_____	_____	_____
4	30	_____	_____	_____
5	35	_____	_____	_____
6	39	_____	_____	_____
7	42	_____	_____	_____
8	44	_____	_____	_____

- Fill out columns three and four of the table above (the marginal product of labour and the value of the marginal product of labour when the price of output equals €3 per mug).
 - Suppose that the competitive wage for workers who can make coffee mugs is €19 per hour. How many workers should this firm hire? Why?
 - Suppose that colleges that teach pottery skills increase the supply of workers that can make coffee mugs and that this lowers the competitive wage for coffee mug workers to €13 per hour. How many workers should this firm hire? Why? Does this represent a shift in the firm's demand for labour or a movement along the firm's demand for labour? Explain.
 - Suppose there is an increase in the demand for coffee mugs and that the price of coffee mugs rises to €5 per mug. Fill out the last column of the table above to show the value of the marginal product of labour when the price of mugs is €5 per mug.
 - Suppose that the competitive wage for coffee mug workers remains at €13 per hour and the price of mugs is €5 per mug. How many workers should this firm now hire? Why? Does this represent a shift in the firm's demand for labour or a movement along the firm's demand for labour? Explain.
- Suppose there is an increase in the demand for lumber, which raises the price of lumber.

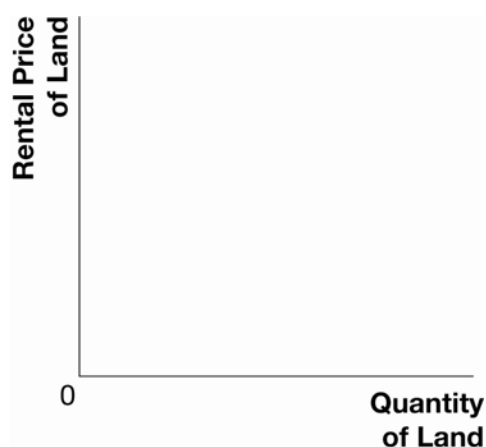
- a. Show the impact of the increase in the price of lumber on the market for lumberjacks in Exhibit 1.

Exhibit 1



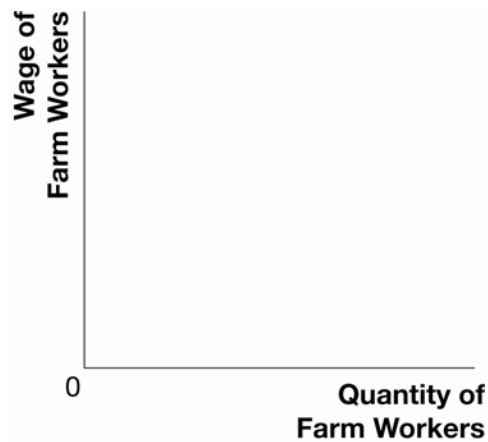
- b. What did the increase in the price of lumber do to the value of the marginal product of lumberjacks and the wage of lumberjacks? Explain.
- c. What will happen to the value of the marginal product and the rental rate for timber-growing land and for capital that is used for cutting and shipping timber? Explain.
- d. How has this development affected the prosperity of the firm and the owners of the factors of production employed by the firm? Explain.
3. Suppose that an enormous amount of forest land is cleared for agricultural use in Brazil.
- a. Show the impact of this event on the market for agricultural land in Brazil in Exhibit 2. What has happened to the marginal product of land and the rental price of land in Brazil?

Exhibit 2



- b. Show the impact of this event on the market for Brazilian farm workers in Exhibit 3. What has happened to the marginal product of farm labour and the wage of farm labour?

Exhibit 3



4. Describe the impact of the following events on the market for car workers in Swindon, England. (Note that Honda operates a factory in Swindon.)
 - a. Honda expands its factory in Swindon.
 - b. *Which?* magazine declares Honda to be the best-made cars in its class.
 - c. Migrants with manufacturing skills from Poland and Romania relocate to Swindon.