

Exercise walk-through

5.2

Changes in Factor Demand and Factor Supply

AP Microeconomics

One bakery, two different markets

A bakery sells bread but hires workers. The bread market concerns output; the labour market concerns an input.

Identify the buyer and the reason

In the labour market, who demands workers' services? Why would stronger bread demand affect that decision?



Firms hire services; workers are not products the firm owns.

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In a **factor market**, firms demand input services. Demand is **derived demand**: it depends on the revenue the input helps produce.



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Extra output becomes extra revenue

Marginal revenue product
labour unit.

(MRP) measures extra revenue per extra

$$MRP = \Delta TR / \Delta L$$

$$MRP = MP_L \times MR \quad \text{at the margin}$$

Which output-market assumption matters?

Only a perfectly competitive product market has $MR = P$, so $MRP = MP_L \times P$. A **wage taker** can still have market power when selling its product.

Marginal factor cost

(MFC) measures the extra total input cost.

Compare MRP with MFC, using the same time period and input units.

A wage taker need not be a product-price taker

A marginal comparison

Extra labour adds 5 output units at the margin. Marginal revenue is \$6 per output unit; product price is \$10. MFC is \$40 per labour unit. Is the extra labour profitable?

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$$MRP = MP_L \times MR = 5 \times 6 = \$30$$

$$\Delta\pi/\Delta L = MRP - MFC = 30 - 40 = -\$10$$

Using price would give value of marginal product $MP_L P = 5(10) = \$50$, which overstates extra revenue here.

Exercises 2.1-2.3

2.1 State one determinant that shifts factor demand.

[1]

2.2 State how an increase in worker productivity affects factor demand.

[1]

2.3 State the effect of an increase in the number of available workers on the equilibrium wage.

[2]

Exercises 2.1-2.3

2.1 State one determinant that shifts factor demand. [1]

2.1

- any one of: the output price, worker productivity, the price of a related input
-

2.2 State how an increase in worker productivity affects factor demand. [1]

2.2

- it increases factor demand (higher MRP)
-

2.3 State the effect of an increase in the number of available workers on the equilibrium wage. [2]

2.3

- the wage falls and the quantity of labour rises

Exercises 3.1-3.2

3.1 Factor demand rises when the price of the good it helps make

[1]

☐

A falls

B rises

C is zero

D is fixed by law

☐

3.2 An increase in labour supply, other things equal,

[1]

A raises the wage

B lowers the wage

C raises MRP

D has no effect

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3.1 B

- rises.

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A raises the wage

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3.2 B

- lowers the wage.

Exercise 3.3 (a)

3.3 The demand for a product rises sharply.

(a) State the effect on the MRP of the labour making it.

[1]

Exercise 3.3 (a)

3.3 The demand for a product rises sharply.

(a) State the effect on the MRP of the labour making it.

[1]

(a)

- it rises

Exercise 3.3 (b)

3.3 The demand for a product rises sharply.

(b) State the effect on the demand for that labour.

[1]

Exercise 3.3 (b)

3.3 The demand for a product rises sharply.

(b) State the effect on the demand for that labour.

[1]

(b)

- labour demand rises

Exercise 3.3 (c)

3.3 The demand for a product rises sharply.

(c) State the effect on the equilibrium wage.

[1]

Exercise 3.3 (c)

3.3 The demand for a product rises sharply.

(c) State the effect on the equilibrium wage.

[1]

(c)

- the equilibrium wage rises