Universidad Politécnica de Cartagena

Introduction to Economics

Topic 4

The Supply. Production and Costs

Grado en Turismo

Facultad de CC de la Empresa

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Universidad Politécnica de Cartagena

Contents

Bibliografía: Mochón, F. (2009): Economía y Turismo. Ed. McGraw Hill. Madrid.

1. The firm and its decisions

- The firm is responsible for production
- The firm uses factors of production and intermediate inputs to produce goods and services suitable for consumption or investment
- The traditional businessperson provides capital, and also organizes, plans and controls
- In large businesses there exists a separation between the ownership and the management of the firm
- Key decisions: What quantity to produce? How to produce?
- Technical efficiency: obtain the maximum quantity possible of output with a given quantity of inputs

- Types of tourism firms:
    - Accommodation
    - Transport
    - Tourist retail
    - Assistance services
    - Catering

2. Short-run production

- Factors of production (inputs) $\begin{cases} \text{Land} \\ \text{Labour (L)} \\ \text{Capital (K)} \end{cases}$

- Production (output) is obtained from inputs and depends on the state of technology. It is represented by:

Production function

$$q = f(L, k)$$

- Short run: period of time during which some factors of production are fixed and others are variable

- In the short run, a firm can only modify the quantity of variable factors employed in order to change production

2. Short-run production

- **Total Product (TP)**: maximum output that each quantity of labour can produce when working with a given quantity of capital units. It is determined by the production function

- **Marginal Product of Labour (MPL)**: is the change in output that results from employing an added unit of labour

- **Law of diminishing returns**: the decrease in the marginal product of an input as the amount of a this factor of production is incrementally increased, while the amounts of all other factors of production stay constant

- **Average product of labour (APL)**: total product divided by the total quantity of labour. Also known as productivity

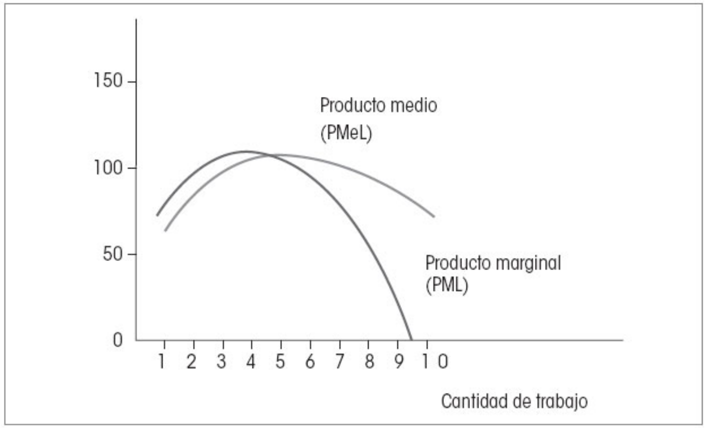

Figura 3.1 Producto marginal y medio. El producto marginal y el producto medio primero crecen, alcanzan un máximo y luego decrecen.

Fuente: Mochón, F. (2009): Economía y Turismo. Ed. McGraw Hill. Madrid.

3. Long-run production

- Long-run: a period of time during which all factors of production are variable; there are no fixed factors

- **Returns to scale**: the quantitative change in output resulting from a proportionate increase in all inputs

- **Increasing returns to scale (economies of scale)**: occurs when an increase in inputs leads to a proportionally larger increase in output

- **Decreasing returns to scale (diseconomies of scale):** occurs when an increase in all inputs leads to a proportionally smaller increase in output

- **Constant returns to scale**: occurs when an increase in all inputs leads to the same proportional increase in output

4. Production costs

- In order to produce a good or service, a firm must use **inputs** (factors of production), and this generates **costs**
- Both accounting (explicit) costs and implicit costs must be taken into account. They both constitute the **opportunity cost**
- **Short-run costs**: the costs incurred by a firm when at least one factor of production is fixed
- **Fixed costs (FC)**: the costs of fixed factors, that are not determined by the level of output produced
- **Variable costs (VC)**: depend on the quantity of variable factors employed
- **Total cost (TC)**: fixed costs plus variable costs
- **Marginal cost (MC)**: the cost added by producing one additional unit of a product or service
- **Average cost (AC)**: total cost divided by the quantity of output

4. Production costs

Coste medio y marginal a corto plazo

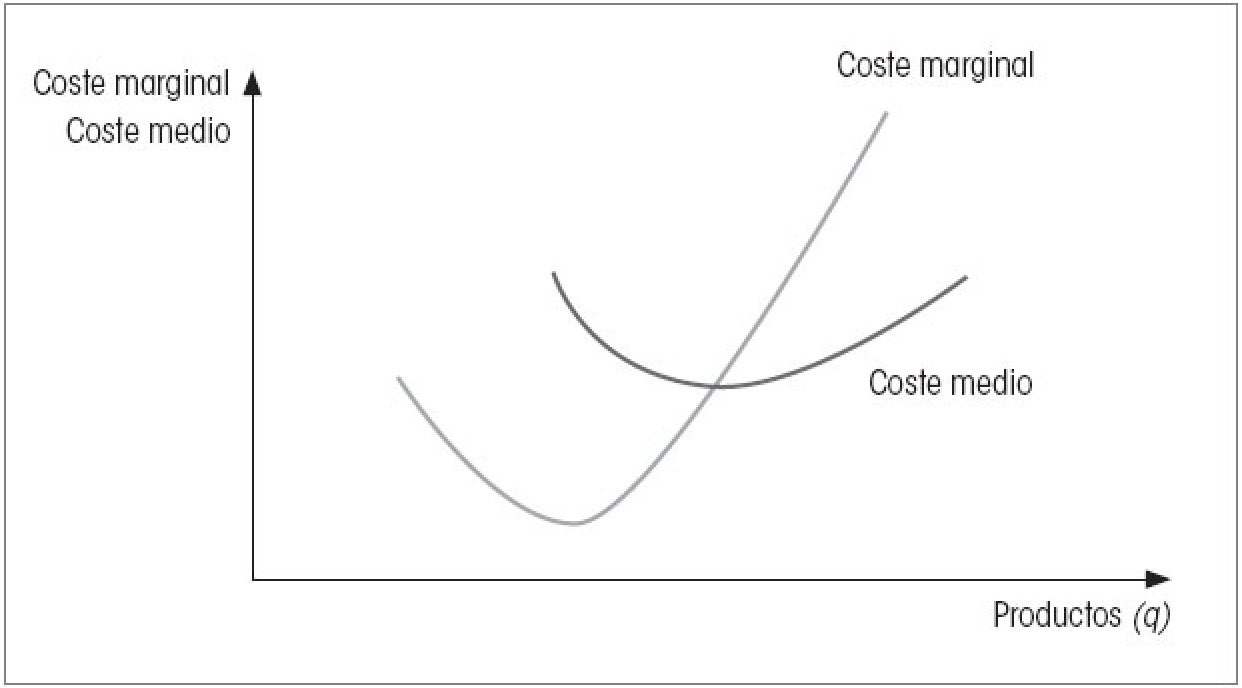

Figura 3.2 El coste marginal (*CM*) y el coste medio. Ambos costes decrecen, alcanzan un mínimo y posteriormente crecen.

Fuente: Mochón, F. (2009): Economía y Turismo. Ed. McGraw Hill. Madrid.

4. Production costs

Long-run costs

In the long run, all factors are variable. The total cost varies with the level of production depending on the quantity of factors employed

Long-run average cost (LRAC) reflects the different types of returns to scale

- The average cost decreases when there exist increasing returns to scale
- The average cost increases when returns to scale are decreasing
- The average cost is held constant when the returns to scale are constant

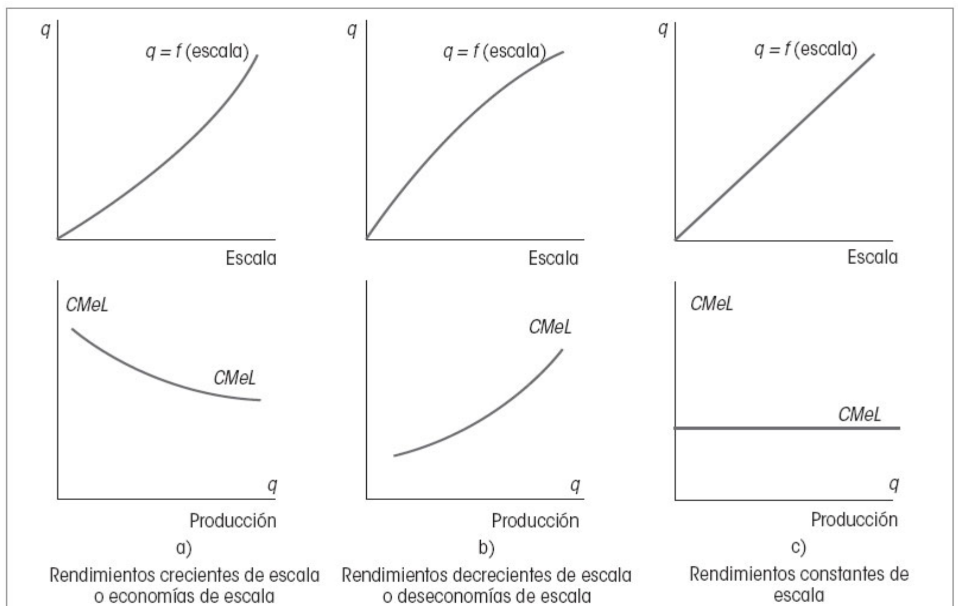

Figura 3.3 **Los rendimientos de escala y los costes medios a largo plazo.** Cuando hay rendimientos crecientes, los CMeL decrecen (gráfico); si los rendimientos son decrecientes, los CMeL crecen (gráfico b), y si existen rendimientos constantes.

Fuente: Mochón, F. (2009): Economía y Turismo. Ed. McGraw Hill. Madrid.

5. Profit maximization

- The firm decides how much of a good is to be produced depending on the price at which it may be sold and the production costs
- **Total revenue (TR):** the total receipts from sales of a given quantity of goods or services = price x quantity
- **Marginal revenue (MR):** the additional revenue that will be generated by increasing product sales by one unit
- **Profit:** total revenue minus total cost, Profit = TR - TC
- The aim of the firm: **to maximize profits**, i.e. maximize the difference between total revenue and total cost

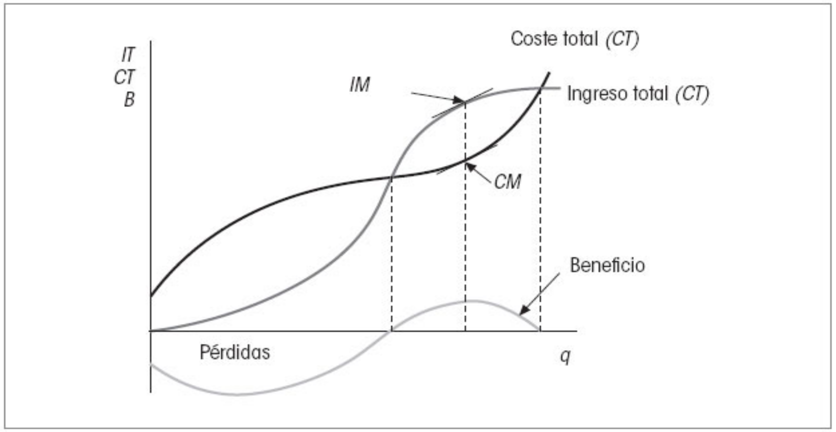

Figura 3.4 La maximización de los beneficios. La empresa maximizadora de beneficios producirá aquella cantidad en la que la diferencia positiva entre el ingreso total (IT) y el coste total (CT) es máxima. En esta situación el ingreso marginal es igual al coste marginal. En términos gráficos el CM se mide por la pendiente del CT y el IM por la pendiente del IT. El beneficio es máximo cuando se igualan ambas pendientes.

Fuente: Mochón, F. (2009): Economía y Turismo. Ed. McGraw Hill. Madrid.

5. Profit maximization

The firm maximizes profit by producing the quantity at which marginal revenue (MR) is equal to marginal cost (MC)

MR = MC

The last unit produced adds the same to the total revenue as to the total cost