Microeconomics

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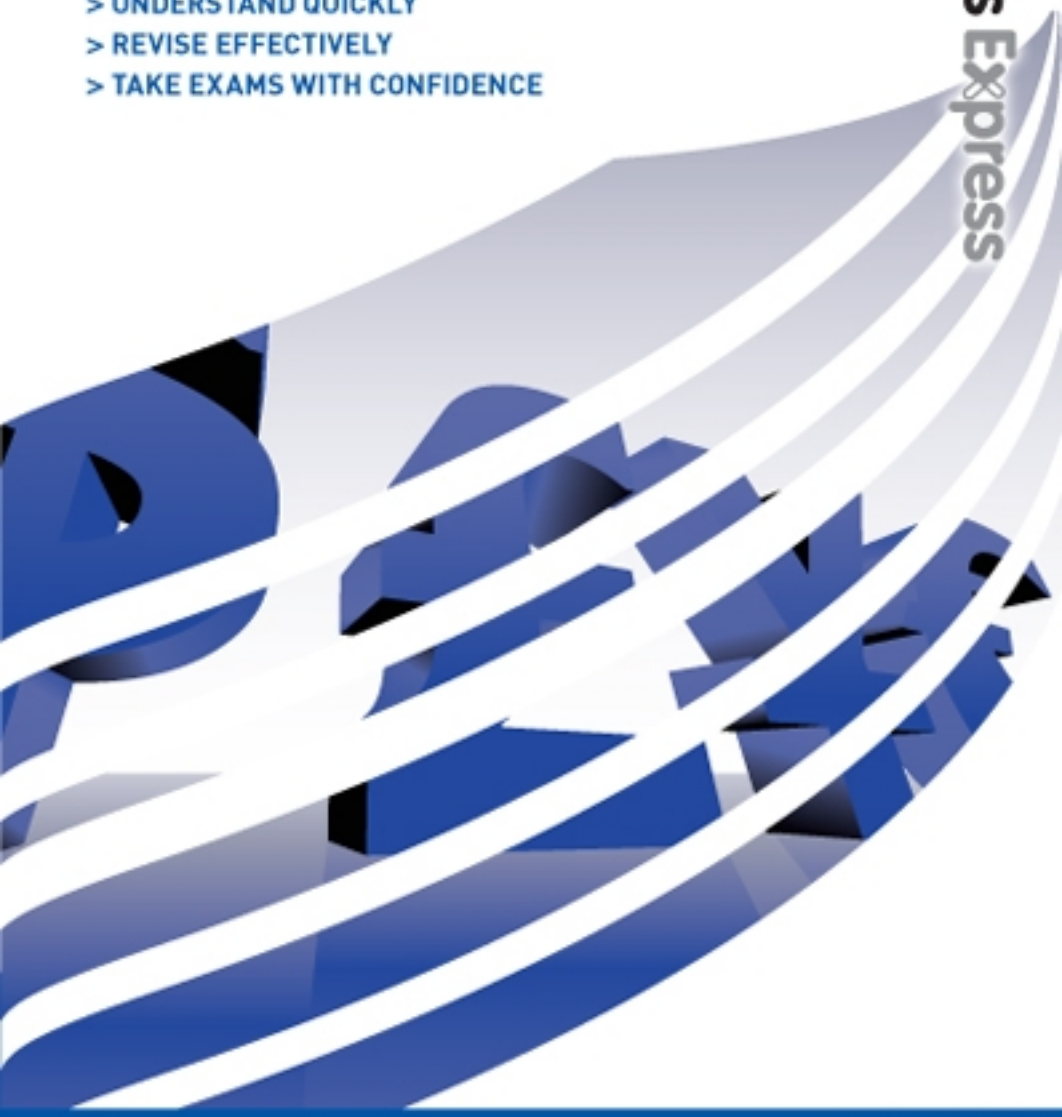
> UNDERSTAND QUICKLY
> REVISE EFFECTIVELY
> TAKE EXAMS WITH CONFIDENCE

Economics Express



ALWAYS LEARNING

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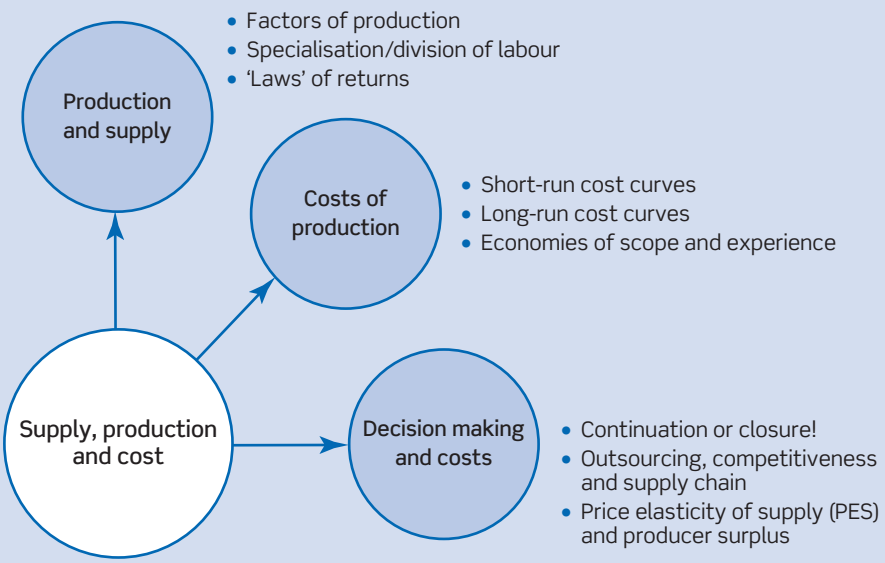
Microeconomics

4 Supply, production and cost

Topic map



A printable version of this topic map is available from **www.pearsoned.co.uk/econexpress**

Introduction

The importance of reliable supply chains in an increasingly globalised economy was sharply highlighted by the Japanese earthquake and tsunami in March 2011. Some 90% of the world's specialist resins used in the semiconductor industry came from a single Japanese factory close to the Fukoshima nuclear power plant, with the loss of output from this plant resulting in the global production of cars and many other products being halted or cut back in the months following the tsunami. The increasing frequency of 'unexpected happenings' has resulted in major companies sourcing from many suppliers in many locations. In attempting to more effectively risk-manage supply chains, business processes are now more likely to involve larger numbers of smaller businesses operating within more geographically dispersed and more flexible supply chains.

This chapter will help you review the production and cost issues which underpin movements along and shifts in the supply curves **encountered in Chapter 1**. We also assess the benefits to businesses from growing in size and operating at a larger scale of production. The growth of 'outsourcing' for parts of the production process is considered, together with more recent developments towards repatriating previously outsourced activities.

Revision checklist

What you need to know:

- The key principles underpinning production activities in both short- and long-run time periods.
- How to outline the linkages between production and cost.
- Why larger businesses often have a cost advantage over smaller businesses.
- The role of outsourcing in an increasingly globalised supply chain and the factors involved in being cost-competitive on an international basis.
- The relevance of costs to business decision making in both short- and long-run time periods.
- The relevance of ideas such as price elasticity of supply and producer surplus to resource allocation.

Assessment advice

Use diagrams

You can improve your analysis and gain higher marks in this topic area by using carefully constructed diagrams to represent production and cost, in both short- and long-run time periods. You can use diagrams to demonstrate the (different) levels of output at which diminishing marginal product and diminishing average product set in. The shape of the marginal and average cost curves can then be related to the marginal and average product curves for labour and other variable factors.

Use consistent terminology

Time periods are particularly important when reviewing production and cost. The short-run time period is that for which at least one factor of production is fixed for that industry or sector of economic activity. The long-run time period is that for which all factors can be varied.

Use empirical evidence

It will always help to illustrate issues of production and cost by using case study examples and by using other empirical evidence. This could include cost and productivity data for different companies and countries.

Assessment question

Can you answer this stimulus-based question? Guidelines on answering the question are presented at the end of this chapter.

Car output per plant per year	Index of unit average production costs (per car)
100,000	100
250,000	83
500,000	74
1,000,000	70
2,000,000	66

Optimum output per year (cars)	
Advertising	1,000,000
Sales	2,000,000
Risks	1,800,000
Finance	2,500,000
Research and Development	5,000,000

Q1. What does the data suggest about the benefits of size in the car industry?

Q2. Explain the reasons for these benefits of size.

Q3. What implications does the data have for production and supply chain issues in the car industry?

Q4. What other production and cost data would be useful for a car company which is considering further outsourcing of elements of its supply chain?

Production and supply

Production and cost issues always involve two key time periods.

Key definitions

Long-run

The long run is that period of time in which all factors of production can be varied. New firms can enter an industry only in the long-run time period in which they can bring together *all* the resources (land, labour, capital, etc.) needed for production to begin.

Short-run

The short run is that period of time in which at least one factor of production is fixed.

Factors of production

Factors of production are those inputs required to produce a particular product, and are often thought to include land, labour, capital and enterprise.

- *Land*: 'all the free gifts of nature', i.e. all the natural resources with some economic value which do not exist as a result of any effort by human beings.

- *Labour*: not only the number of people available for the production of goods or services, but also including their physical and intellectual abilities. The labour force of a country is the number of people in employment plus the number unemployed.
- *Capital*: any man-made asset which can be used to support the production of goods and services. Fixed capital can be used time and again in the production process and includes machinery and factory buildings, the road and rail networks, hospital and educational buildings and so on. Circulating capital (also known as working capital) consists of raw materials and other intermediate inputs into the production process.
- *Enterprise*: sometimes referred to as entrepreneurship, with the entrepreneur seen as performing two important roles:
    - hiring and combining factors of production;
    - risk-taking by producing goods and services in anticipation of demand which may, or may not, materialise.

Specialisation/division of labour

'Division of labour' or 'specialisation' is relevant to many questions involving productivity and cost. These terms refer to the ways in which economic activities can be broken down into their various component parts so that each worker performs only a small part of the entire operation. The idea was developed as early as 1776 by Adam Smith in his *Wealth of Nations* when he demonstrated how the production of pins could be greatly increased by splitting the process down into separate tasks, each performed by a single person.

Advantages of specialisation

- *Increased productivity.* Greater specialisation leads to a greater output per worker:
    - performing the same task results in higher productivity ('practice makes perfect');
    - less time is wasted in moving from work area to work area or in changing one set of tools for another;
    - breaking production down to a small number of repetitive tasks makes possible the use of specialist machinery which can also raise productivity;
    - workers can specialise in performing tasks for which they are well suited.
- *Increased standard of living.* The greater levels of productivity have led to an increase in the volume of total output and value of total money income. Greater productivity also helps to reduce prices, raising 'real' income still higher.
- *Increased range of products available.* Increased standards of living have increased the effective demand for a wide range of goods and services.

Disadvantages of specialisation

- *Increased boredom.* Greater specialisation results in boredom as workers perform the same tasks, which can lead to low morale, poor labour relations and higher absenteeism as well as carelessness and an increased number of accidents.
- *Lack of variety.* Output is standardised and large numbers of identical products are produced.
- *Increased worker interdependence.* Each worker in the production process now depends upon all other workers and a stoppage by a small group of workers can cause considerable disruption.
- *Limited market size.* Division of labour is only possible if there is a sufficiently large market to purchase the larger quantities produced.

Examples & evidence

Specialisation in bread making

Bread making by major producers such as Warburton has adopted the ideas of Adam Smith's division of labour in pin-making. Some 10 separate processes have been identified in bread making over a four-hour production period.

Preparation

Bulk mix of dough

Divide dough into pieces

Mould pieces into shape

Cut dough

Baking

Place in tin

Smooth surface of dough in tin

De-tin (remove from tin)

Packing

Cool

Slice

Wrap

Of course, an 11th process is then involved, namely distribution to supermarkets and bread shops.