Quadrant II – Transcript and Related Materials

Programme:	Bachelor of Commerce (First Year)
Subject:	Economics
Paper Code:	CC3
Paper Title:	Micro Economics
Unit:	Unit 2-Production and Cost
Module Name:	Iso-cost lines, properties and expansion path
Module No:	25
Name of the Presenter:	Assistant Professor Delicia Pereira

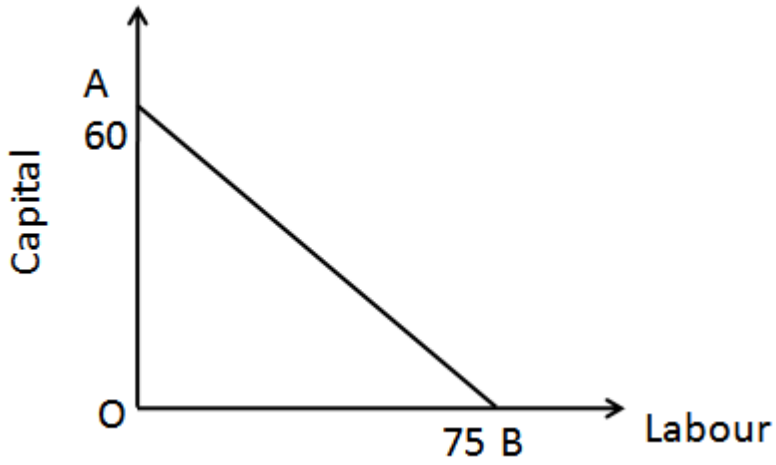
Notes

Iso-cost lines

The prices of factors are represented by the iso-cost line. The iso-cost line plays an important role in determining what combination of factors the firm will choose for production.

An iso-cost line shows various combinations of two factors that the firm can buy with the given outlay.

- In the diagram, the x-axis measures units of labour (quantity of labour) and on the Y-axis the units of capital (quantity of capital) is measured.
- Suppose the firm has Rs 300 to spend on the factors labour and capital.
- The price of labour is Rs 4 per unit and price of capital is Rs 5 per unit.
- With Rs 300, the firm can either purchase 75 units of labour (300/4). Or the firm can purchase 60 units of capital (300/5).



In the diagram, 0A represents the units of capital and OB represents the units of labour. The straight line AB will pass through all combinations of labour and capital which the firm can buy with a total outlay of Rs 300.

This line AB is known as the iso-cost line. An iso-cost line is defined as the locus of various combinations of factors which a firm can buy with a constant money outlay.

Properties of isoquants

Iso-cost lines have the following properties-

1. An ICL is a negatively sloped straight line – The iso-cost line is a downward sloping line from left to right.

2. Isocost lines closer to the origin are associated with lower levels of cost than those farther from the origin – In other words, a lower iso-cost line represents a lower amount of expenditure. A higher iso-cost line represents a higher amount of expenditure.

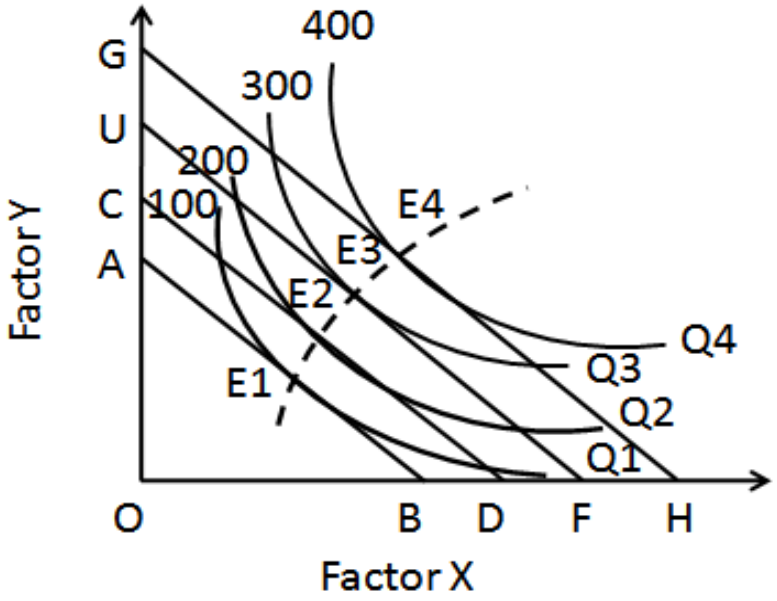
3. The x-intercepts of the ICL would be equal to the quantity of input X that the firm would be able to buy if it spends all its money on input X , and the y-intercept would be the quantity of input that the firm would be able to buy if it spends all its Money on input Y.

4. We can use isocost lines to derive a rule for how the firm should choose the combination of labor and capital it uses to minimize the cost of producing it’s profit maximizing level of output.

The Expansion Path

- The expansion path determines how the entrepreneur changes his factor combination as he expands his output given the factor prices.
- The expansion path shows the cheapest way of producing each level of output, given the prices of factors. The producer can choose to produce at some point on the expansion path.

- The prices of the two factors X and Y are represented by the slope of the iso-cost line AB.



- In the figure, there are four iso-cost lines; AB, CD, UF and GH. Each iso-cost line represents different levels of total cost or outlay.
- If the firm wants to produce the output level denoted by Q1 (which is equal to 100 units of output), it will choose the factor combination E1 which minimises cost of production; E1 is the point of tangency between the equal product curve Q1 and the iso-cost line AB.
- If a firm wants to produce a higher level of output as denoted by the equal product curve Q2, then it will choose the factor combination E2 which is the least cost combination for new output.
- If the firm wants to choose higher levels of output denoted by Q3 and Q4, the firm will choose a combination E3 and E4 which minimises the cost for the given outputs.

The line joining the minimum cost combinations such as E1, E2, E3, E4 is called the expansion path, because it shows how the factor combination with which the firm produces will alter as the firm expands its level of output.

- Thus the expansion path may be defined as ‘the locus of points of tangency between the isoquants and the iso-cost lines.