

Production Possibility Curve: Schedule Representation and Assumptions

Production Possibility Curve: Features, Schedule Representation and Assumptions!

The economic problem of scarcity and choice can be easily and clearly explained with production possibility frontier or curve.

Production possibility curve or production frontier refers graphically to all the possible combinations of maximum amounts of two goods which can be produced with the available productive resources of an economy.

In short, production possibility curve is a curve which shows all possible combinations of two goods that can be produced by making full use of given resources and technology in an economy.

We know that an economy always faces the problem of resource allocation i.e. making a choice of its resources. Again there is a maximum limit to the quantity of goods and services which an economy can produce with full use of its available resources and technology. We also know that an increase in the production of one commodity reduces the production of other commodity. In this way available resources can be used alternatively to produce different combinations of goods and services. This is known as production possibility. The curve that shows these alternatives is called production possibility curve.

Schedule Representation:

Let us assume that two commodities are to be produced say, cloth and wheat. If all the resources are put to produce cloth, then the maximum of cloth will be produced per year, depending on the quantitative and qualitative resources and the technological efficiency. Let us, now further suppose that within the existing conditions only 5 million meters of cloth can be produced, with all the resources at our command.

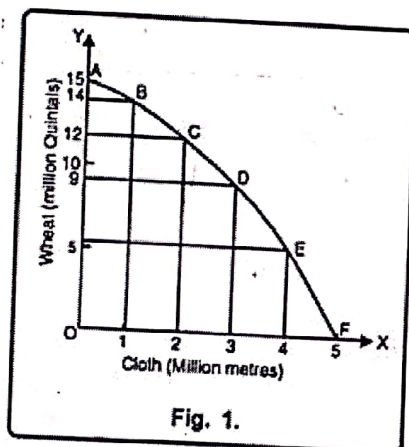
Alternatively, if all the resources are used for the production of wheat, we can produce 15 million tonnes of food grains. In between these two extreme possibilities, there are many other alternatives. Thus we shall have to sacrifice one for the other. This fact is clear from the Table No. 1.

Table 1

Production Possibilities (1)	Cloth in million metres (2)	Wheat (in million quintals) (3)	Marginal opportunities cost of cloth (in wheat) (4)
A	0	15	—
B	1	14	1
C	2	12	2
D	3	9	3
E	4	5	4
F	5	0	5

Diagramme Representation:

With the help of above table, we can show production possibility curve in respect of cloth and wheat. Economy can produce maximum 5 million metres of cloth or 15 million quintals of wheat. In Fig. 1, on OX axis, we have measured cloth in million metres while on OY axis; we have taken wheat in million quintals.



The concave curve AF shows the join of various possible combinations which gives a curve known as transformation curve or production possibility frontier. Each production possibility curve is the locus of output combination which is obtained from given factors or inputs. Similarly B, C, D and E show the different combinations for two different goods i.e. cloth and wheat. The economy has to choose out of these various combinations, which can be produced by existing resources and technology. They are also known as 'Technologically Efficient' or 'Optimum Product Mix'. Here we should remember that any combination beyond AF curve does not possess sufficient resources.

Assumptions:

The production possibility curve is based on certain assumptions:

- The economy produces two commodities only:

(b) The quantities and qualities of factors of production viz., land, labour capital etc. are fixed.

(c) The techniques of production are constant.

(d) There is full employment in the economy and

(e) The prices of factors of production are constant.

Features of Production Possibility Curve:

Production possibility curve has two main features as explained under:

1. It Slopes Downwards to Right:

Production possibility curve slopes downwards to the right shows that economy has to forgo some quantity of one commodity to get more quantity of other commodity. In figure when the economy moves from combination B to C, economy has to give up two million quintals of wheat to get one million metres of additional cloth.

2. Concave to the Origin:

Production possibility curve is concave to the origin. It shows the operation of the law of increasing opportunity cost. In figure when we move from A to B, economy has to forgo one million quintals of wheat. Again when we move from B to C, economy is required to give up two million quintals of wheat to get one additional unit i.e. one million metres of cloth.

5 Basic Problems of an Economy (With Diagram)

The following points highlight the five basic problems of an economy. The problems are: 1. What to Produce and in What Quantities? 2. How to Produce these Goods? 3. For whom is the Goods Produced? 4. How Efficiently are the Resources being Utilised? 5. Is the Economy Growing?.

Problem # 1. What to Produce and in What Quantities?

The first central problem of an economy is to decide what goods and services are to be produced and in what quantities. This involves allocation of scarce resources in relation to the composition of total output in the economy. Since resources are scarce, the society has to decide about the goods to be produced: wheat, cloth, roads, television, power, buildings, and so on.

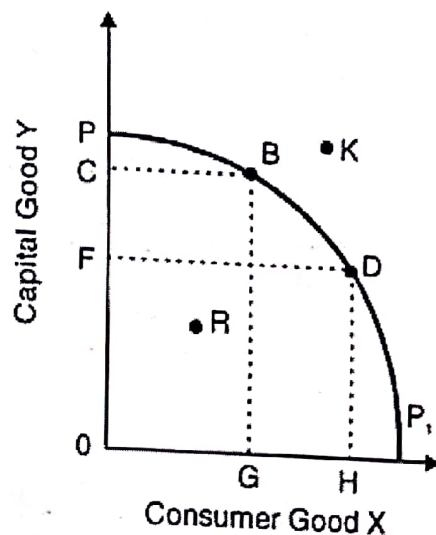


Fig. 1

Once the nature of goods to be produced is decided, then their quantities are to be decided. How many tonnes of wheat, how many televisions, how many million kws of power, how many buildings, etc. Since the resources of the economy are scarce, the problem of the nature of goods and their quantities has to be decided on the basis of priorities or preferences of the society.

If the society gives priority to the production of more consumer goods now, it will have less in the future. A higher priority on capital goods implies less consumer goods now and more in the future. But since resources are scarce, if some goods are produced in larger quantities, some other goods will have to be produced in smaller quantities.

This problem can also be explained with the help of the production possibility curve as shown in Figure 1.

Suppose the economy produces capital goods and consumer goods. In deciding the total output of the economy, the society has to choose that combination of capital goods and consumer goods which is in keeping with its resources.

It cannot choose the combination R which is inside the production possibility curve PP_1 because it reflects economic inefficiency of the system in the form of unemployment of resources. Nor can it choose the combination R which is outside the current production possibilities of the society. The society lacks the resources to produce this combination of capital goods and consumer goods.

It will, therefore, have to choose among the combinations B, E, or D which give the highest level of satisfaction. If the society decides to have more capital goods, it will choose combination B; and if it wants more consumer goods, it will choose combination D.

Problem # 2. How to Produce these Goods?

The next basic problem of an economy is to decide about the techniques or methods to be used in order to produce the required goods. This problem is primarily dependent upon the availability of resources within the economy.

If land is available in abundance, it may have extensive cultivation. If land is scarce, intensive methods of cultivation may be used. If labour is in abundance, it may use labour-intensive techniques; while in the case of labour shortage, capital-intensive techniques may be used.

The technique to be used also depends upon the type and quantity of goods to be produced. For producing capital goods and large outputs, complicated and expensive machines and techniques are required. On the other hand, simple consumer goods and small outputs require small and less expensive machines and comparatively simple techniques.

Further, it has to be decided what goods and services are to be produced in the public sector and what goods and services in the private sector. But in choosing between different methods of production, those methods should be adopted which bring about an efficient allocation of resources and increase the overall productivity in the economy.

Suppose the economy is producing certain quantities of consumer and capital goods at point A on PP curve in Figure 2. By adopting new techniques of production, given the supplies of factors, the productive efficiency of the economy increases. As a result, the PP_0 curve shifts outwards to P_1P_1 .

It leads to the production of more quantities of consumer and capital goods from point A on PP_0 curve to point C of PP with be the new production possibility curve and the economy will move from point A to B where more of both the goods are produced.



The third basic problem to be decided is the allocation of goods among the members of the society. The allocation of basic consumer goods or necessities and luxuries comforts and among the household takes place on the basis of among the distribution of national income.

At point B on the PP curve, the economy is producing more of luxuries OC for the rich and less of necessities OD for the poor whereas at point D more of necessities OH are being produced for the poor and less of luxuries OF for the rich.



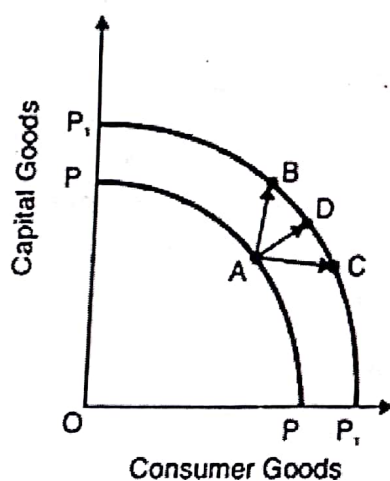
Problem # 4. How Efficiently are the Resources being Utilised?

This is one of the important basic problems of an economy because having made the three earlier decisions, the society has to see whether the resources it owns are being utilised fully or not. In case the resources of the economy are lying idle, it has to find out ways and means to utilise them fully.

If the idleness of resources, say manpower, land or capital, is due to their male allocation, the society will have to adopt such monetary, fiscal, or physical measures whereby this is corrected. This is illustrated in Figure 4 where the production possibility curve PP reflects idle resources within the economy at point A , while the production possibility curve P_1P_1 reflects the full utilisation of the resources at point B or C .

It is for the society to decide whether to produce more capital goods at point B or more consumer goods at point C , or both at point D at the level of full employment represented by the In an economy where the available resources are being fully utilised, it is characterised by technical efficiency or full employment.

To maintain it at this level, the economy must always be increasing the output of some goods and services by giving up something of others.



Problem # 5. Is the Economy Growing?

The last and the most important problem is to find out whether the economy is growing through time or is it stagnant. If the economy is stagnant at any point inside the production possibility curve, says in Figure 5, it has to be moved on to the production possibility curve PP whereby the economy now produces larger quantities of consumer goods and capital goods.

Economic growth takes place through a higher rate of capital formation which consists of replacing existing capital goods with new and more productive ones by adopting more efficient production techniques or through innovations.

This leads to the outward shifting of the production possibility curve from PP to P_1P_1 ; (in Figure 5). The economy moves, say after 5 years, from point A to B or C or D on the P_1P_1 curve. Point C represents the situation where larger quantities of both consumer and capital goods are produced in the economy. Economic growth enables the economy to have more of both the goods.

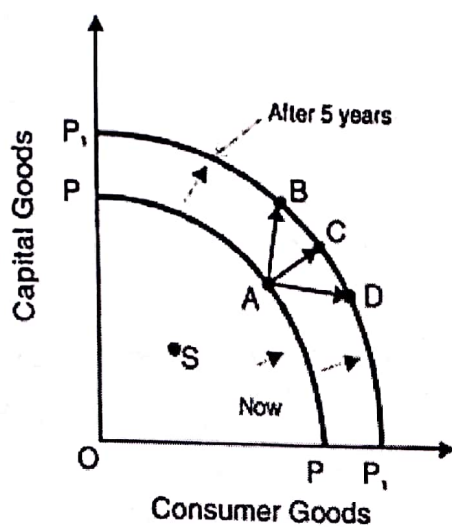


Fig. 5

Conclusion:

All these central problems of an economy are interrelated and interdependent. They arise from the fundamental economic problems of scarcity of means and multiplicity of ends which lead to the problem of choice or economizing of resources.