Production Possibility Frontier

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Production Possibility Frontier

Modern economists explain central problems of an economic system with the help of production possibility curve.

Production possibility curve is a curve showing alternative production possibilities of two sets of goods with the given resources and techniques of production. It is also called production possibility Frontier or boundary because it shows the limit of what it is possible to produce with present resources.

This curve is also called Transformation line or Transformation curve because it indicates that if more of a good-X is to produce then factors will have to be withdrawn from the production of good-Y and transferred to the production of good-X. In other words, good-Y is transformed into good-X.

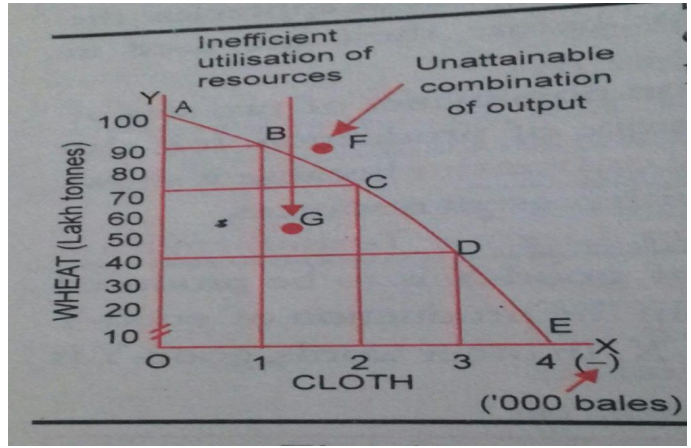
In the words of Samuelson "Production possibility curve is that curve which represents the maximum amount of a pair of goods or services that can both be produced with an economy's given resources and technique, assuming that all resources are fully employed".

Suppose an economy decides to produce only two goods, namely wheat and cloth, with its available resources and 'given Technology'. If all the resources are used for production of wheat alone then 100 lakh tonnes of wheat can be produced. On the contrary, if all the resources are used for the production of cloth alone than 4000 bales of cloth can be produced. If the economy produces both the goods, then within these limits, various combination of two goods can be produced. Table 1 shows different possibilities of production of wheat and cloth. It is called as production possibility schedule.

Goods **Production Possibilities**

	A	B	C	D	E
Wheat (lakh tonnes)	100	90	70	40	0
Cloth ('000 bales)	0	1	2	3	4

Production possibility schedule



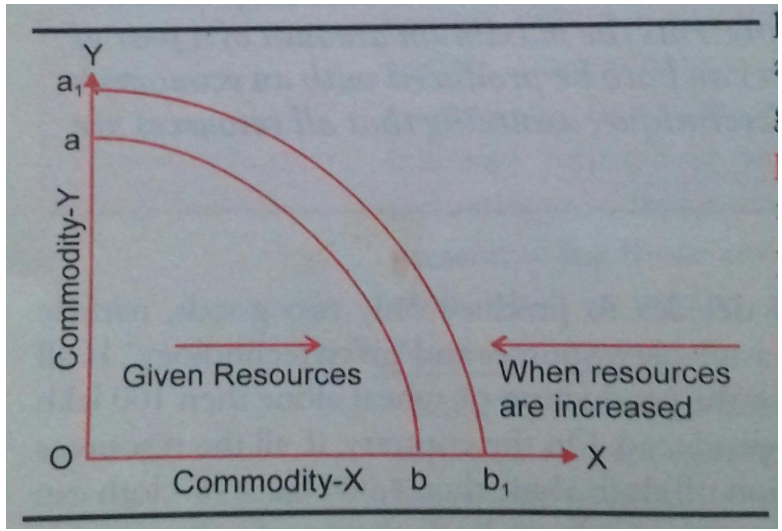
Production possobility or Transformation curve.

Shifting / rotation of Production possibility curve

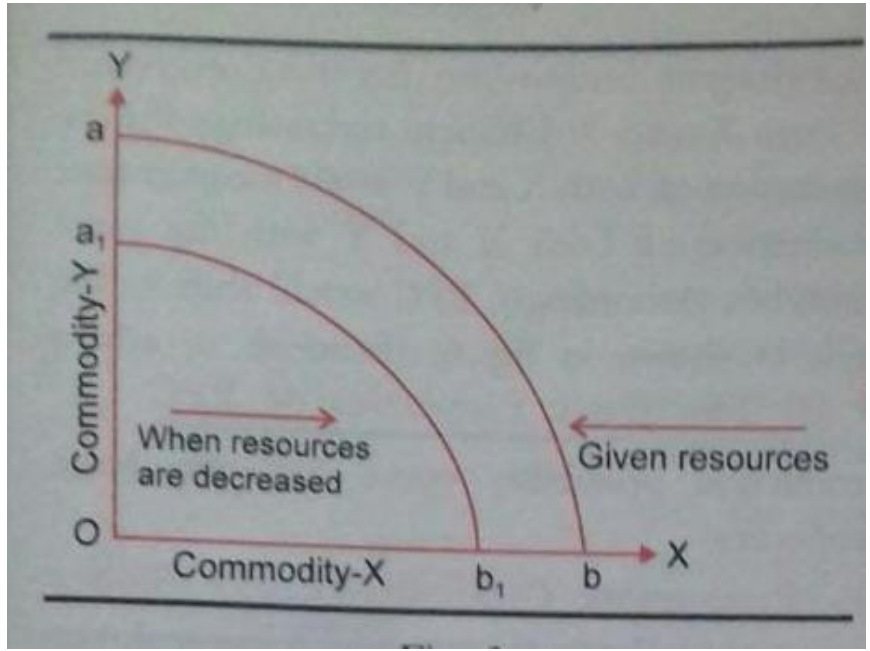
The production possibility curve will shift / rotate under the following conditions:

Change in resources

(a) **Resources are increased:**
If resources are increased, then we can produce more of the both the goods. Accordingly PPC shift to right as shown in a figure. (from ab to a_1b_1)



(b) <u>Resources are decreased:-</u>
If resources are decreased, we can produce less of both the goods. Accordingly PPC shift to the left as shown in figure (from ab to a_1b_1)



Change in technology:-

Efficient Technology for the production of commodity-x:
Efficient Technology for the production of commodity-X would mean more production of X with the same resources. Accordingly, PPC would rotate (not shift) as shown in figure (from ab to a_1b_1)

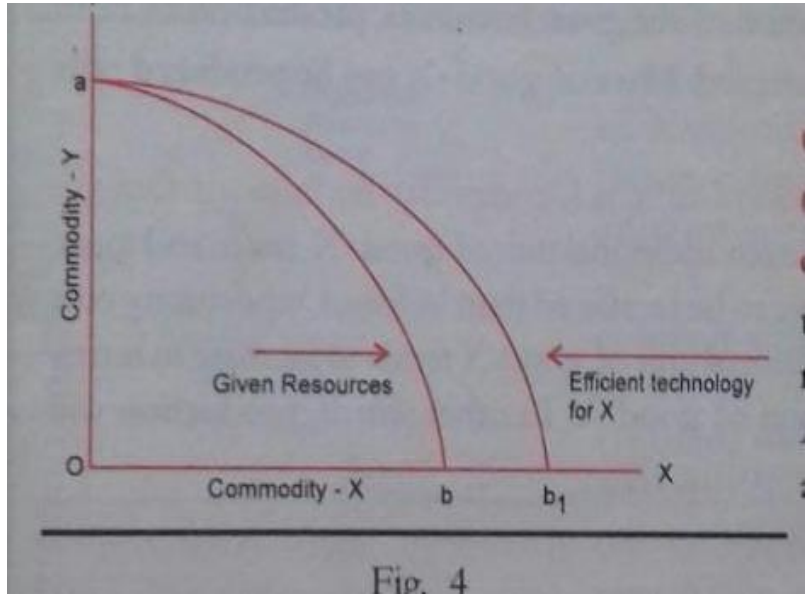
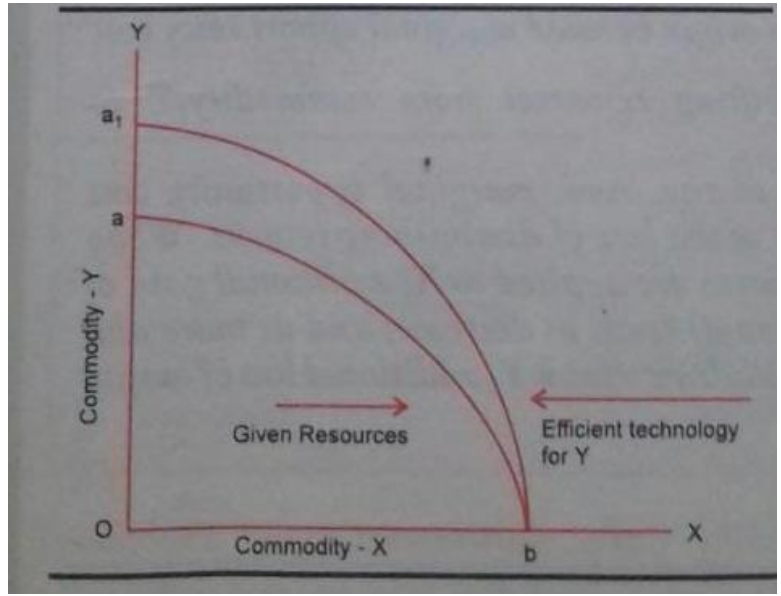


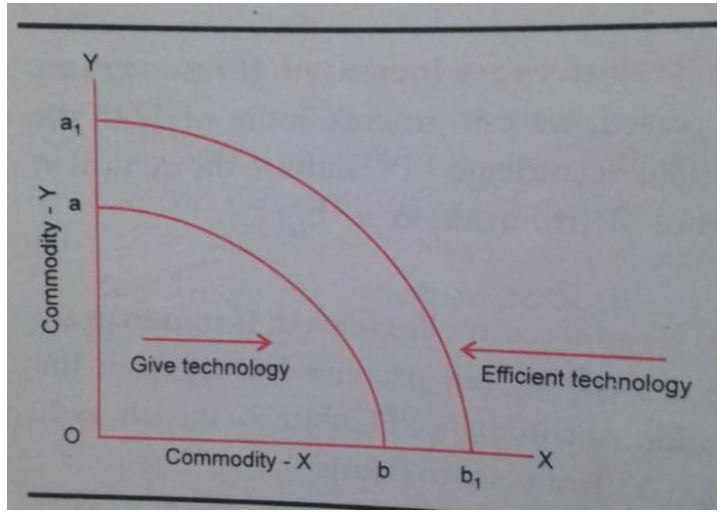
Fig. 4

Efficient Technology for the production of commodity-Y:-

Efficient Technology for the production of commodity-Y would mean more production of Y with the same resources. Accordingly, PPC would rotate(not shift) as shown in figure (from ab to a_1b_1)



Efficient Technology for production of both X and Y:- Efficient Technology for the production of both X and Y would mean greater production of both X and Y with the same resources. Accordingly PPC would shift to right as shown in figure.



Basic properties of PPC

Production possibility curve has two basic properties:

- **Production possibility curve slope downward:- Production possibility curve slope downward from left to right. It is because in a situation of fuller utilisation of the given resources, production of both the goods cannot be increased More of good- X can be produced only with less of good-Y.**
- **Production possibility curve is concave to the point of origin:-It is because to produce each additional unit of good-X, more and more units of good- Y will have to be sacrificed than before. Opportunity cost of producing every additional unit of good-X tends to increase in terms of the loss of production of good-Y. In other words, production will obey the law of increasing opportunity costs.**

Shape of PPC

- Production possibility curve is concave to the point of origin:-It shows increasing slope i.e. more and more of comodity Y. (On the Y-axis) is to be sacrificed for every additional unit of commodity X. Or in order words, the cost of producing additional X tends to increase in terms of the loss of Y. This is accordance with the principle of diminshing returns or increasing cost of production.