

B: Production Possibilities Curve:

At the end of this part, students should be able to answer the following learning outcomes.

a) Basic Economic Concepts.		Skills Level
Production Possibilities Curve.	i. Describe the Importance of a PPC.	2
	ii. State the Assumptions of the PPC.	1
	iii. State the Limitations of the PPC.	1
	iv. Derive a Production Possibilities Schedule/ Curve.	3
	v. Apply the concept of Scarcity, Choice and Opportunity cost upon the PPC.	3
	vi. Apply the concept of Specialization upon the PPC.	3
	vii. Apply the concept of Production upon the PPC.	3
	viii. Relate some of the Basic Economic Concepts in the PPC.	3
	ix. Discuss the Importance of the PPC Model in Economics.	4

The foundation of the economic problem based on scarcity, choice, and opportunity cost, can be more clearly explained by using production possibilities schedule and curve.

Production Possibilities Curve (PPC):

Production possibilities curve is a graph or model showing possible alternative or possible combination of producing two goods and assuming all resources are used efficiently and there is a technology hold or fixed level of technology.

PPC also known as **Production Possibility Frontier (PPF)** or a **Transformation Curve**.

The PPC model:

- ✓ Looks at what an economy can possibly produce assuming it uses all the available resources.
- ✓ It shows the range of possible outputs from which actual output can be selected
- ✓ It shows essential ideas and concept in economics such as scarcity, choices and opportunity costs
- ✓ Gives a simplified picture of reality.

Production Possibilities Schedule:

Production possibilities schedule is a table showing the possible combinations or possible alternative of producing two goods and provided our assumptions for resources and technology hold or fixed level of technology

Assumption of PPC:

Before drawing up our production possibilities schedule and curve the following assumptions are made, take note that the efficiency must always exist, that is the economy always operating at full employment and full production.

- The Economy can only make two goods/ services with its available resources.
- The Economy 's resources can be used to make both the goods/ services.
- This Economy is closed to trade.
- There is no money in circulation.
- The numbers of resources available to this Economy are fixed and finite.
- The level of technology is fixed/remains unchanged.
- Any point on the PPF is a combination of two goods where resources are fully employed
- The resources are efficiently employed.

Limitation of PPC:

The PPF is a theoretical concept only. It is not possible to accurately draw an individual economy's PPF.

Deriving/Constructing Production Possibility Curve.

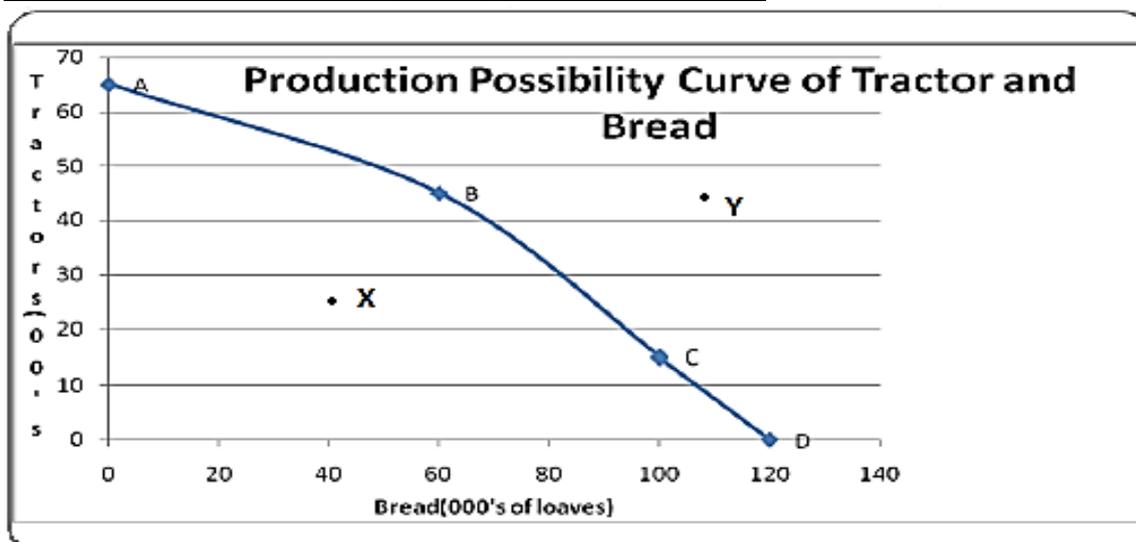
The above assumptions are used to construct the Production Possibility Curve and Schedule.

Production Possibility Schedule for Bread and Tractors:

Alternatives	Bread (000's of loaves)	Tractors (00's)
A	0	65
B	60	45
C	100	15
D	120	0



Production Possibility Curve for Bread and Tractors:



Application of Economic Concepts on the PPC:

Scarcity:

Is illustrated by point A, B, C, D. That is production is limited and being maximized on the combinations along the PPC. The economy cannot produce beyond the curve due to amounts of resources available. If the scarcity did not exist, there would be no limit on production and no production possibility model.

Choices:

The concept of choices is demonstrated by all combinations of Tractors and Bread that economy can make. The economy can operate at one point only – that is there can be only one combination of tractor and bread at any one time. The economy must choose at which the best possible combination to produce at.

Opportunity Costs:

The concept of opportunity cost is illustrated by the second most attractive point on the PPC that the economy did not choose or had to forgo.

For example: - if the economy were operating at point A, and wishes to increase its production of bread to 100000 loafs, the economy must forgo certain units of tractors that is 5500 tractors in order to produce the amount of bread it needed.

Specialization:

Combination A and Combination D on the PPC above shows the concept of Specialization as the economy concentrating in producing tractors only at point A with all its available resources and concentrating in producing bread only at point D with all its available resources.

Under-Utilization of Resources:

It occurs when the economy operates at point X (combination inside the PPC). At this point, the economy is making 2500 tractors and 40000 breads. The economy could make more of one or other goods or a mix of both if it fully employed (utilized) all its resources.

Unattainable/Impossible Combination:

Illustrates by Combination Y (4500 Tractors and 110000 breads) as the economy can't be able to produce at that combination due to limited resources. The resources cannot produce two things at the same time.

Efficiency:

Any points on the PPC illustrates the concept of efficiency i.e., production efficiency and allocative efficiency.

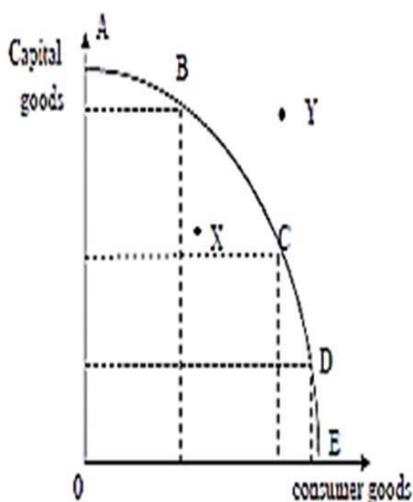
Production Efficiency: -

Means producing maximum with the given level of resources. Production efficiency is achieved when the economy is operating on its PPC.

Allocative Efficiency: -

It refers to the combination of goods that would maximize economic welfare. Is achieved when the economy is producing the unique combination of goods that best meets the needs of that society at given point in time.

Significance of each point inside, on and outside the PPC



Point A:

Its shows that resources are fully utilized and all resources are diverted to the production of Capital Goods.

Point B:

Its shows that resources are fully utilized where most of the resources are used for the production of Capital Goods.

Point D:

Its shows that resources are fully utilized where most of the resources are used for the production of Consumer Goods.

Point E:

Its shows that resources are fully utilized and all resources are diverted to the production of Consumer Goods.

Point X: (Any point inside the PPC)

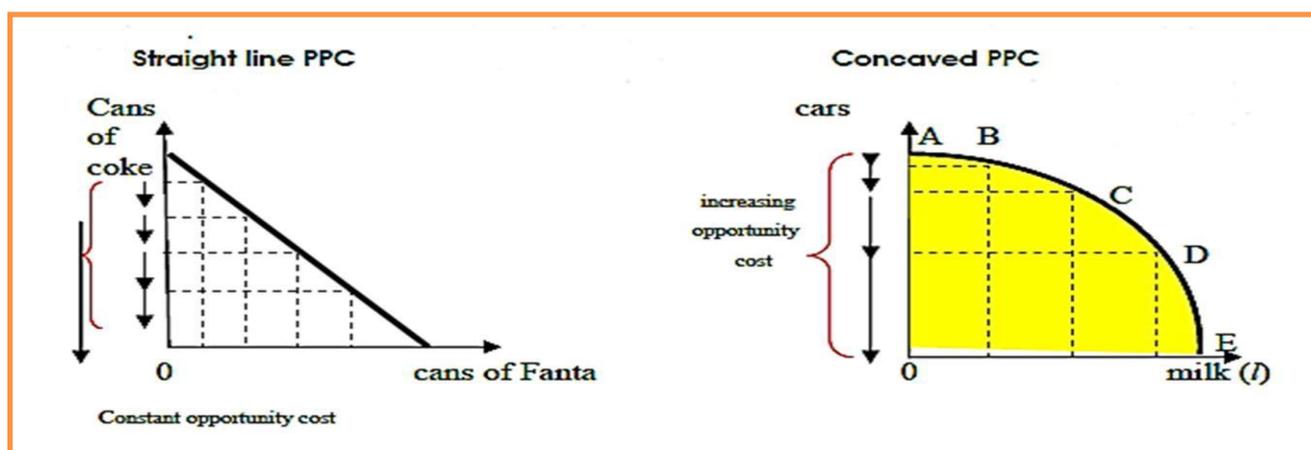
Its shows that the resources are not fully utilized (Under-utilization of resources). This shows a waste of resources.

Point Y: (Any point outside the PPC)

This point illustrates a combination of consumer and capital goods that is impossible as there are not enough resources to have this much capital and consumer goods (Unobtainable/Unattainable).

Shape of the PPC.

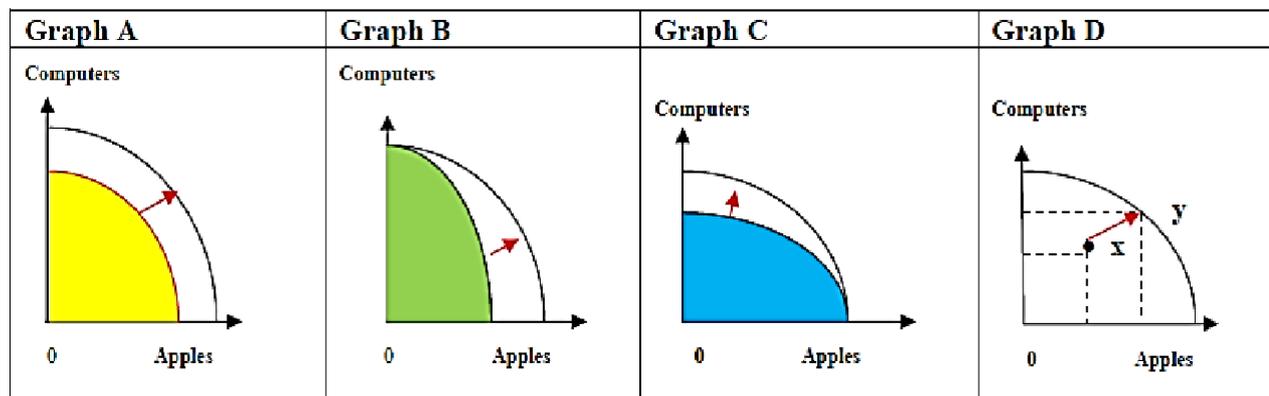
PPC can be drawn as a straight line or concave to the origin.



The shape of ***PPC is concave to the Origin bowed outwards***, illustrating the law of ***increasing opportunity cost***. The law of increasing opportunity costs states that as production of one good increase, the opportunity cost of producing additional units is increasing.

The shape of the PPC is straight line due to the law of constant costs. The law of constant opportunity cost states that as production of one good increase the opportunity cost of producing additional units remains constant.

Shifts of the PPC



Graph A shows increase in production of both goods due to improvement in the quantity and quality of resources and technology.

Graph B shows increase in production of apples only due to improvement in the resources and technology used to produce apples.

Graph C shows increase in production of computer only due to introduction of modern technology to produce computers.

Graph D shows movement from point inside PPC to point on the PPC. This illustrates increase in efficiency of resource use. This movement can be achieve without incurring any opportunity cost.

Exercise

Identify which statements are true or false. Write True or False in the spaces provided.

1. A production possibilities curve is possible with the current available resources. _____
2. A simple production possibilities curve shows the alternatives for the production of more than two goods. _____
3. A bow out production possibilities curve is determined by the principle of increasing opportunity cost. _____
4. Efficiency requires an economy to always produce on the production possibilities curve. _____
5. A production possibilities schedule is a graph showing the alternatives of producing two goods. _____

