PRODUCTION POSSIBILITIES CURVE

A production possibilities curve (PPC) shows the various combinations of two goods that can be produced in a country when all available resources are fully and efficiently utilized.

It is also known as production possibility frontier, production possibility boundary or transformation curve. A production possibility curve is a diagrammatic illustrations or combinations of two commodities which a society can produce given a quantity of resources and technology. A single production possibility boundary illustrates three concepts, which are:

1. Choice
2. Scarcity
3. Opportunity cost

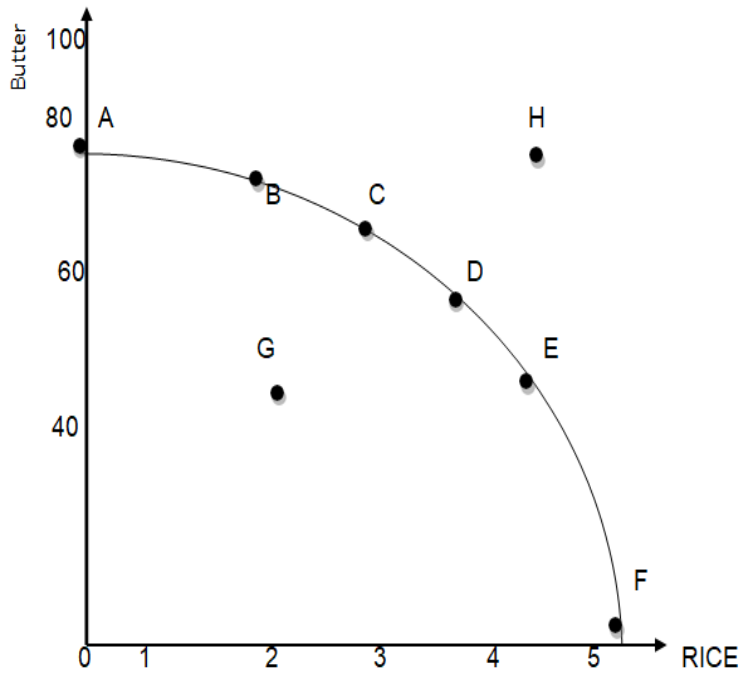
ASSUMPTIONS OF PPC

1. Only two goods x (consumer goods) and y (capital goods) are produced indifferent proportions in the economy.
2 The same resources can be used to produce either or both of the two goods.
3 The supplies of factors are fixed
4 The production techniques are given and constant
5 The time period is short
6 The economy′s resources are fully employed and technologically efficient.

Production Possibilities Schedule

Product Combination	Rice (Bags)	Butter (Tins)	Opportunity cost of an additional bags of rice
A	0	80	-
B	1	76	- 4
C	2	70	- 6
D	3	60	- 10
E	4	40	- 20
F	5	0	- 40

The production possibilities schedule presented in Table above is shown graphically as production possibilities curve in Figure below. The PPC in Figure below is drawn under the assumption that the society is using all its resources to produce only two goods – rice and butter.



Production Possibilities Curve (PPC)

The curve not only shows production possibilities but also the rate of transformation of one product into the other when the economy moves from one possibility point to the other. The PPC is concave to the origin and the shape of the PPC is due to increasing opportunity cost.

The downward slope of the PPC indicate that there is an opportunity cost of producing more of one type of a commodity due to limited resources and technical – know – how which indicate a negative slope.

The slope of the PPC usually referred to as marginal rate of transformation (MRT), measures the opportunity cost of a unit more or less of a commodity i.e. the PPC is explained using the concept of opportunity cost.

NOTE ON THE CURVE

(i) Scarcity. The boundary formed by the curve joining points A and F indicates that there is a limit tothe amount of both rice and butter that the country can produce at any point in time.

(ii) Full – employment. Any Point on the PPC (such as A to F) shows the combinations of the two goods that the economy can produce given that all available resources are fully and efficiently utilized, full employment, full production, technologically efficient.

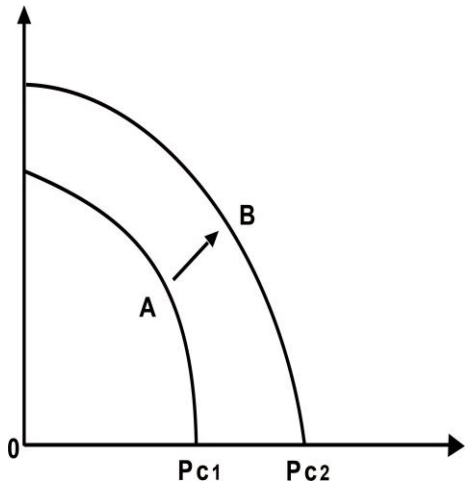
(iii) Unemployment or underemployment. Any point inside the PPC, such as G, shows that some resources are either left completely idle (unemployed) or are not efficiently utilized (underemployed or widespread unemployed), production is inefficient, technologically inefficient.

(iv) Unattainable output level. Any point outside the curve, such as H, indicates that technology is not feasible, unobtainable or not attainable.

CHANGES IN THE PPC

a. Shift to the right:

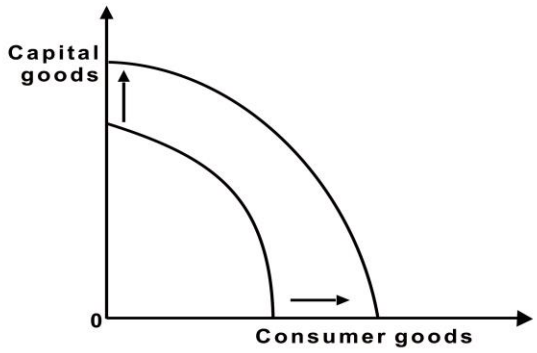
A shift in the PPC to the right could result from changes in production techniques or technological progress, economic growth and also when all factors inputs are doubled, the PPC will shift outward or rightward as shown in the diagram below.



From the diagram above, the curve shifts from PC1 to PC2, i.e. from point A to B, the shift in the curve outwards is due to the factors mentioned above earlier.

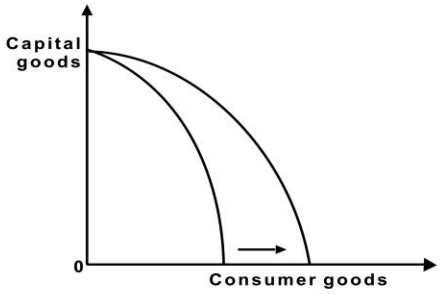
NOTE:

1. Both the capital and consumer goods can also shift to the right. This is shown below:



From the curve above, there is a shift in both capital and consumer goods as the curve shift outward or rightward.

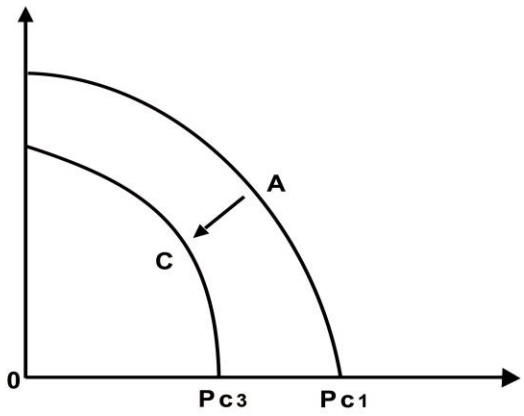
2. There can also be a shift in Capital goods to the right while the consumer goods remain constant. This is also shown below:



The curve shows that there is a shift in consumer goods only while capital goods remains constant.

a. Shift to the left

Economic depression or recession, unemployment and also when all factors are reduced by half, the PPC will shift inward or leftward as shown in the diagram below.



From the curve above, the PPC shift inward or leftward due to the factors mentioned earlier. The curve shift from PC1 to PC3 i.e. from point A to B.

The shape of the production possibility frontier (PPF) is primarily determined by the opportunity cost of producing one good in terms of the other good. The key factors influencing the shape of the PPF are:

1. Resources and Technology: The availability and productivity of resources and technology play a significant role in determining the shape of the PPF. More advanced technology and more abundant resources can shift the PPF outward, allowing for increased production of both goods.
2. Scarcity: The scarcity of resources and factors of production is a fundamental concept in the PPF. When resources are limited, a trade-off exists between producing one good over the other, and this trade-off is reflected in the shape of the PPF.
3. Constant Opportunity Cost: In some cases, the PPF may have a linear or constant opportunity cost, meaning that the trade-off between producing the two goods remains the same along the entire curve. This results in a straight-line PPF.
4. Increasing Opportunity Cost: In other cases, the PPF may have an increasing opportunity cost. This means that as a society produces more of one good, the opportunity cost (in terms of the other good) increases. This leads to a bowed-out, concave PPF.
5. Decreasing Opportunity Cost: Although less common, a decreasing opportunity cost may also be seen, indicating that the opportunity cost of one good decrease as more of it is produced. This would result in an inward-bowed, convex PPF.