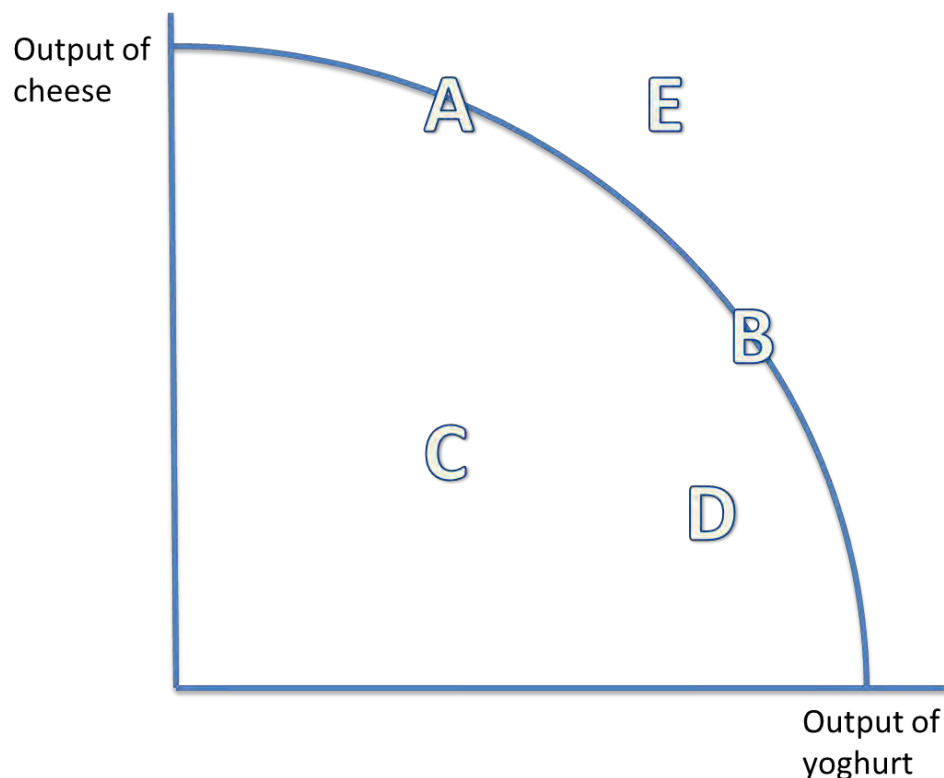


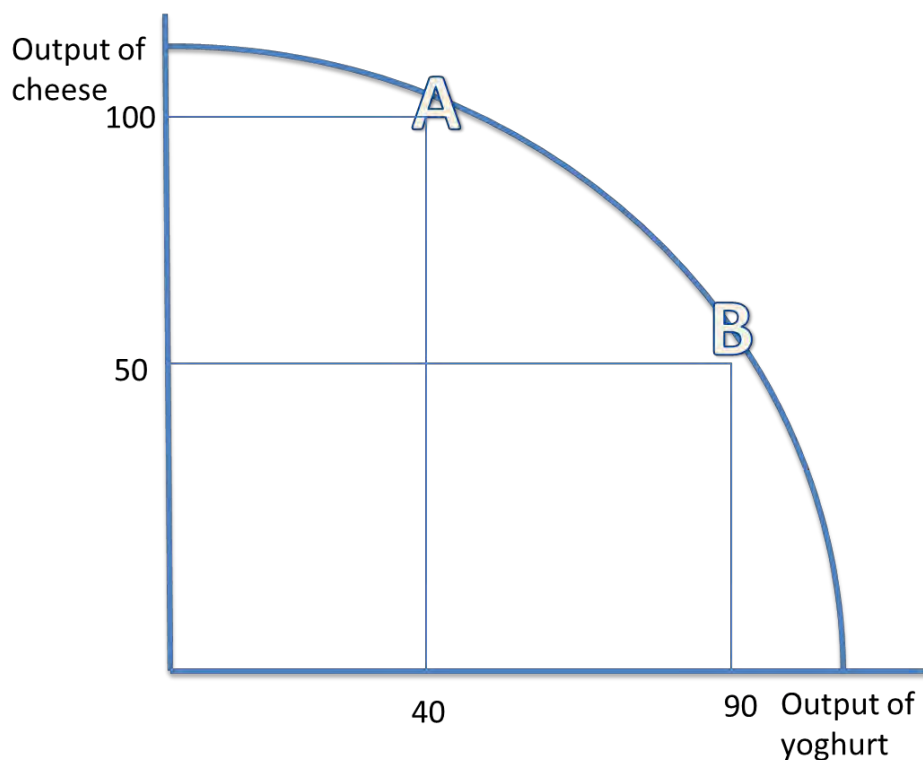
3.1.1.5 Production Possibility Diagrams

- Production possibility frontiers (PPFs) depict the maximum productive potential of an economy, using a combination of two goods or services, when resources are fully and efficiently employed.
- PPF curves can show the opportunity cost of using the scarce resources. For example, if the scarce resource is milk, there is a trade-off between producing more cheese or more yoghurt from the milk. The PPF can show this:



- Producing at points A and B are the most efficient combinations of output on the PPF. Producing at B, so more yoghurt than cheese is produced, incurs an opportunity cost of producing more cheese.
- The law of diminishing returns** states that the opportunity cost of producing more yoghurt increases, in terms of the lost units of cheese that could have been produced.
- Producing at C or D is inefficient, and resources are not used to their **full productive potential**. There is the potential to use these resources more efficiently, which would shift production closer to the curve. In other words, there is the unemployment of economic resources.

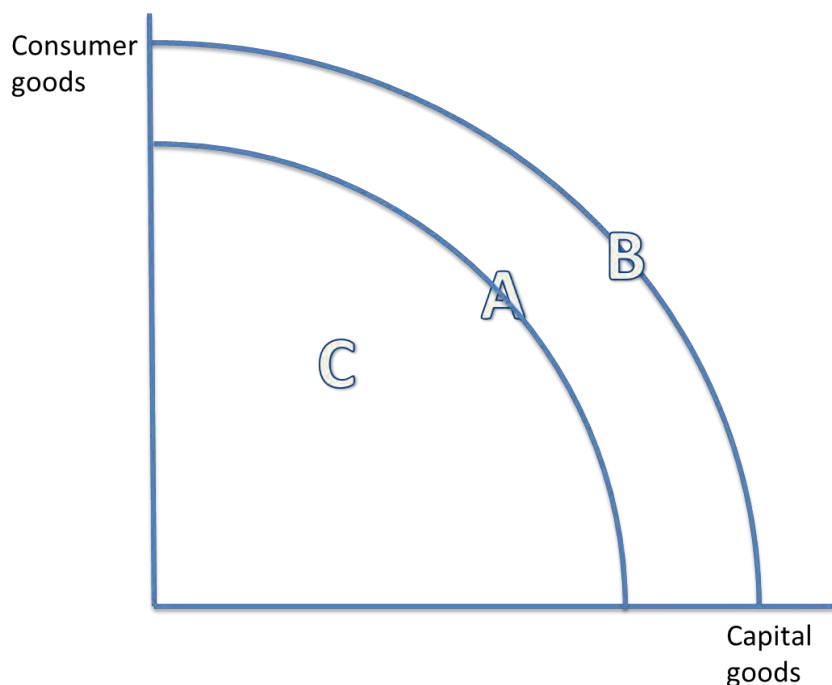
Producing at E is not yet attainable with the current resources.















This PPF shows the opportunity cost of producing each product. Producing 100 units of cheese means that only 40 units of yoghurt can be produced instead of the potential of 90. Therefore, the opportunity cost is $90 - 40 = 50$ units of yoghurt.

Economic growth and decline:

The PPF can also depict economic growth or decline. Only production under and on the PPF is attainable. Production outside of the PPF is not obtainable. However, only production on the PPF uses resources efficiently (A and B). It is inefficient to produce below the PPF (point C).



-  Economic growth can be shown by an outward shift in the PPF, from the curve with point A on it, to the curve with point B on it. A decline in the economy would be depicted by an inward shift.
-  The original curve is drawn assuming:
 - A fixed amount of resources are used
 - There is a constant state of technology
-  An increase in the quantity or quality of resources shifts the PPF curve outwards, so the productive potential of the economy increases, and there is economic growth. This can be achieved with the use of supply side policies.
-  Moving along the PPF is different to shifting the PPF. Moving along the PPF uses the same number and state of resources, and shifts production from fewer consumer goods to more capital goods, for instance. This incurs an opportunity cost. Shifting the PPF curve outwards, for example, uses either more resources or resources of a greater quality. This reduces the opportunity cost of producing either capital or consumer goods, since more goods can be produced overall.
-  **Capital goods** are goods which can be used to produce other goods, such as machinery.
-  **Consumer goods** are goods which cannot be used to produce other goods, such as clothing.
-  **Productive and Allocative Efficiency**
-  All points on the boundary are **productively efficient**. This is because resources are being used to their productive potential so it is efficient.
-  However, not all points are allocatively efficient. This is because more of one good cannot be produced without reducing the amount of the other product available.
-  **Allocative efficiency** is when no one can be made better off without making someone else worse off. Another name for this is **Pareto efficiency**.
-  If more of both goods could be produced, there would be a gain in allocative efficiency. This is because there is an improvement in welfare.
-  The PPF only shows potential output, and allocative efficiency is concerned with how goods are distributed in society.