1.1.4 Production possibility frontiers

a) The use of production possibility frontiers to depict:

- *the maximum productive potential of an economy*
- *opportunity cost (through marginal analysis)*
- *economic growth or decline*
- *efficient or inefficient allocation of resources*
- *possible and unobtainable production*

b) The distinction between movements along and shifts in production possibility curves, considering the possible causes for such changes

c) The distinction between capital and consumer goods

- A Production Possibility Frontier shows alternative combinations of two goods or services attainable when all resources are fully and efficiently employed
- Reallocating scarce resources from one product to another involves an opportunity cost
- Capital goods are required to produce other goods and consumer goods give satisfaction to consumers
- A trade-off is when you have to choose between conflicting objectives at the same time because you can't achieve all of them at the same time which involves compromising to achieve each objective a bit
- Economic growth/ decline is the increase or decrease in the productive capacity of the economy indicating an increase/ decrease in real output. On the PPF this represents the area under the graph getting bigger/smaller.
- Points on the PPF are not always allocatively efficient because not all points reflect the good that people want and need
- Marginal analysis considers the impact of small changes on the current situation. The rational decision-maker will only decide on an option if the marginal benefit exceeds the marginal cost
- Movements along a given PPF occur when there are changes in the combination of the two goods being produced. While shifts correspond to economic growth
- If we increase our output of consumer goods (i.e. moving along the PPF from point A to point B) then fewer resources are available to produce capital goods
- If the law of diminishing returns holds true then the opportunity cost of expanding output of X measured in terms of lost units of Y is increasing.
- A PPF is normally concave to the origin so as we move down the PPF, as more goods are allocated towards Good Y the extra output gets smaller- so more of Good X has to be given up in order to produce Good Y
- This is an explanation of the law of diminishing returns and it occurs because not all factor inputs are equally suited to producing items
- The law of diminishing returns states that if one input in the production of a commodity is increased while all other inputs are held fixed, a point will eventually be reached at which additions of the input yield progressively smaller, or diminishing, increases in output.
- Points within the PPF are attainable but not all resources are fully utilised for example the resources may be unemployed or used inefficiently. We could increase total output of goods and services by moving towards the PPF

- Points on the PPF are all efficient output combinations as they lie on the existing PPF.
- Points outside the PPF are not yet attainable as there aren't enough factors of production but they could become attainable with an increase in factor resources, an increase in productivity or an improvement in technology
- Trade between countries allows nations to consume beyond their own PPF potentially leading to gains in economic welfare
- Producing more of both goods would represent an improvement in welfare and a gain in what is called allocative efficiency.
- The PPF will shift outwards when:
    1. Discovery of new natural resources
    2. Development of new methods of production which increase productivity
    3. Advances in technology
    4. Improvements in education and training
    5. Factors increasing workforce e.g. immigration, better childcare
- The PPF will shift outwards when:
    1. Natural disasters which cause a destruction of productive capacity
    2. Depletion of natural resources e.g. wars and conflict
    3. Factors causing a reduction in workforce size
    4. A deep recession that results in factories closing
- The opportunity cost of allocating resources towards good Y involves sacrificing some of good X
- With diminishing returns, the marginal output of good Y diminishes as more factor resources are allocated to it
- A straight line PPF is an indication of perfect factor substitutability of resources. The marginal opportunity cost of switching resources is constant
- Changes in production technology or more factor inputs can cause the PPF to shift outwards – this leads to an increase in a country's potential output
- Factors causing an outward shift in the PPF:
    - Higher productivity: more output is produced for the same amount of resources so production is more efficient
    - Better management of factor inputs: Improved management reduces waste and improves quality
    - Increase in the stock of capital and labour supply and discover of new natural resources: means there are more available factor inputs so the maximum that can be produced is higher
    - Innovation and invention of new products and resources: productivity increases which leads to more efficient production
- Factors causing an inward shift in the PPF:
    - Emigration
    - Natural disasters
    - Fall in productivity
    - Wars and conflict
- Resource depreciation occurs when machinery is used and depreciates in value due to wear and tear:
    - Machinery
    - Skills Atrophy
    - Buildings

        - Basic Infrastructure
- Resource depletion is the loss of capital:
    - Human Capital flight
    - Capital Scrapping
    - Natural disasters
    - Deforestation
- During an economic recovery, aggregate demand will be rising. This leads to an increase in real national output and a fall in the amount of spare capacity. Meanwhile economic growth leads to a rise in a country's productive capacity causes the PPF to shift out which then allows increased supply both of consumer and capital goods
- Successful supply-side policies can help to bring about an outward shift of the country's PPF
- An economy can't produce outside its PPF, as it has a limited amount of the factors of production, without economic growth.
- The best point on the PPF curve is where it fits with demand or whether a country specialises and then trades with other countries
- Ways immigration helps the economy:
    - Possible increase in productivity as immigrants are better educated and can bring skills and practices from their own country
    - Immigrants pay taxes to the government
    - Immigrants often do undesirable jobs
    - Increase in labour force and therefore PPF
    - Increase in aggregate demand
    - Positive impact on dependency ratio