

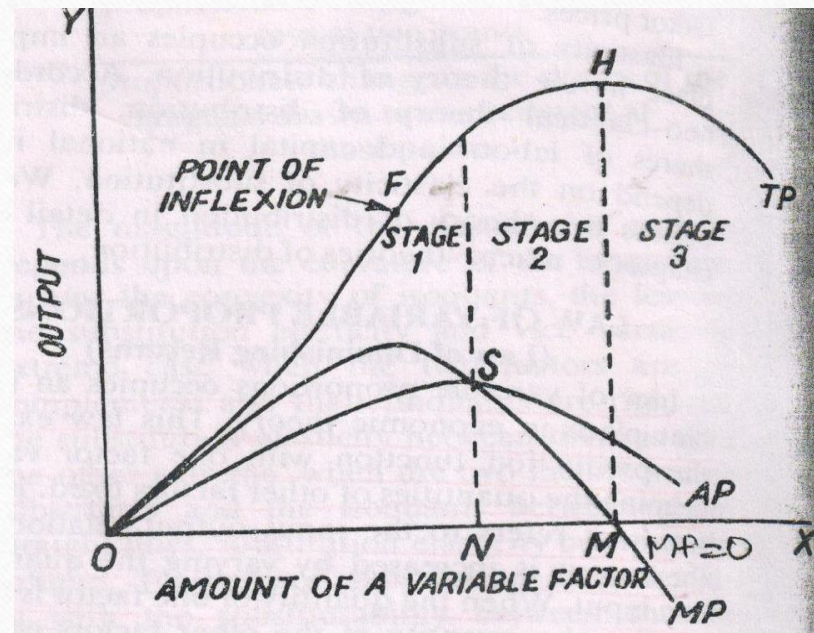
# Law of Variable Proportion

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## Part III

# Law of Variable Proportion

- Production passes three stages when factor proportion is varied.
  - Can be explained through diagram.
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# Law of Variable Proportion

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- In above figure,
- X-axis shows the quantity of the variable factor;
- Y- axis represents the total product, average product and the marginal product.
- In this figure, the total product curve TP goes on increasing to a point and after that it starts declining.
- average and marginal products of the variable factor also rises and then falls with increase in its amount.

# Law of Variable Proportion

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- **Stage 1:** The first stage is characterised by rising average product of variable factor. The first point continues until ON amount of labour.
- total product to a point increase at an increasing rate.
- In figure from the origin to the point F, **slope of** the total product curve TP is increasing, that is, up to the point F, the total product increases at an increasing rate ( the total product curve TP is concave upwards up to the point F).

# Law of Variable Proportion

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- which means that the marginal product MP rises.
- From the point F onward during the stage 1, the total product curve goes on rising but its slope declines.
- From point F onwards the total product increases at a diminishing rate ( total product curve is concave downwards), i.e., marginal product falls but is positive.



# Law of Variable Proportion

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- The point F where the total product stops increasing at an increasing rate and starts increasing at the diminishing rate is called the point of inflexion.
- At this point of inflexion marginal product is maximum, after which it slopes downward.
- The stage 1 ends where the average product curve reaches its highest point.
- During stage 1, though marginal product of the variable factor falls, it still exceeds its average product pulling the average product curve upward.

# Law of Variable Proportion

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- The average product curve rises throughout.
- In the first stage, the quantity of the fixed factor is too much relative to the quantity of the variable factor so that marginal product of the fixed factor is negative.

To be Continued -----