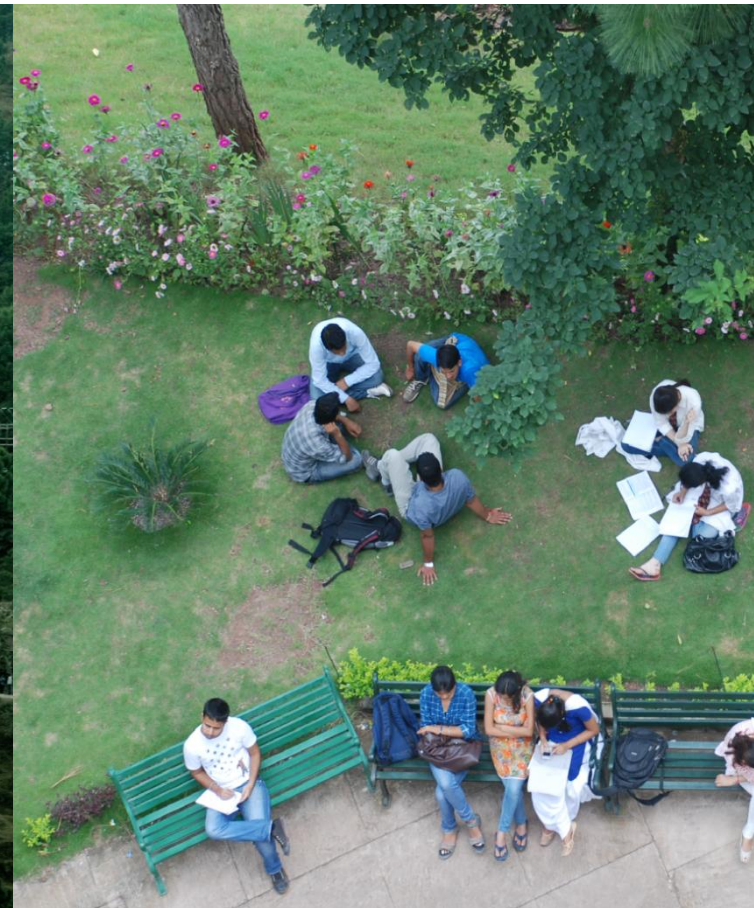
PRINCIPLES OF ECONOMICS

Lecture 21 PRODUCTION IN SHORT RUN

September, 2015



TOPICS TO BE DISCUSSED

1. **Production in Short Run:**
   - Fixed Vs Variable Factors

2. **Three stages of production**

SHORT RUN VS LONG RUN PRODUCTION

- **Short run** Period of time in which quantities of one or more production factors cannot be increased or decreased
  - **Fixed input:** Production factor that cannot be varied

- **Long run** Period of time sufficient to increase or decrease the supply of inputs

Production in Short Run
(Law of Variable Proportion/Law of Diminishing Returns)

LAW OF DIMINISHING RETURNS

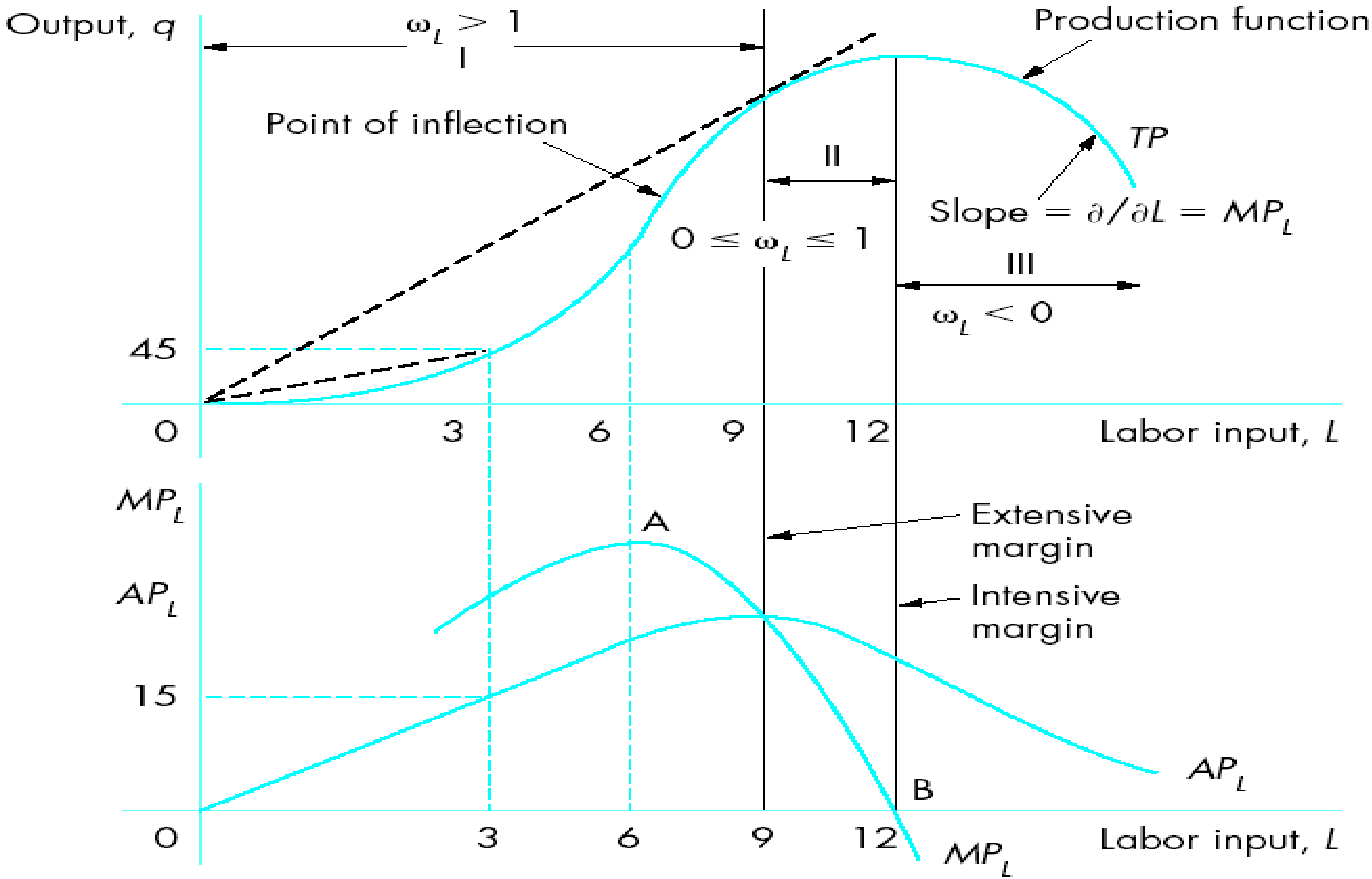
As additional units of variable input are combined with a fixed input, after a certain point the additional output (MP) starts diminishing

PRODUCTION WITH ONE VARIABLE INPUT (LABOR)

Production with One Variable Input

Amount of Labor (L)	Amount of Capital (K)	Total Output (Q)	Average Product (Q/L)	Marginal Product ($\Delta Q/\Delta L$)
0	10	0	—	—
1	10	10	10	10
2	10	30	15	20
3	10	60	20	30
4	10	80	20	20
5	10	95	19	15
6	10	108	18	13
7	10	112	16	4
8	10	112	14	0
9	10	108	12	–4
10	10	100	10	–8

STAGES OF PRODUCTION IN SHORT RUN



THREE STAGES OF PRODUCTION

TP	MP	AP
STAGE Increases at an increasing rate, then at diminishing rate	Increases, reaches its maximum & then declines till MR = AP	Increases & reaches its maximum
STAGE II Continues to increase at a diminishing rate till it reaches maximum	Is diminishing and becomes equal to zero	Starts diminishing
STAGE III Starts declining	Becomes negative	Continues to decline, will never be zero

WHICH STAGE WILL BE PREFERRED BY A FIRM?

- Stage-II is rational which means relevant range for a rational firm to operate
- Stage-I is profitable for the firm to keep on increasing the use of labour
- Stage-III is inadvisable to use additional labour as MP is negative and TP is falling

Thank You ☺