LABOUR MARKET

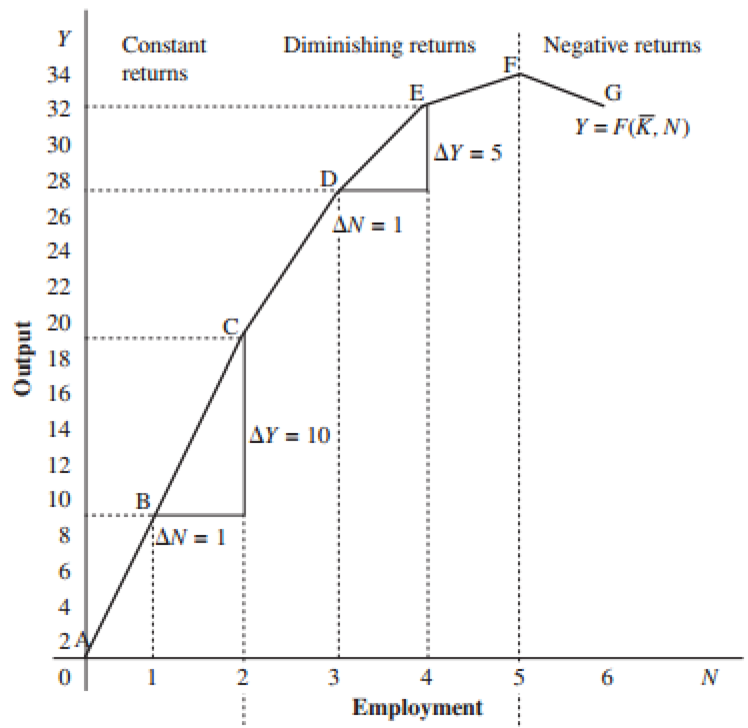
Production function

- Output is function of input $Y = F(N)$

	N = *Labor*	Y = *Output*	$\Delta Y/\Delta N$ = *MPN*	
A	0	0		
B	1	10	10	Constant returns
C	2	20	10	
D	3	28	8	Diminishing returns
E	4	33	5	
F	5	34	1	
G	6	32	−2	Negative returns

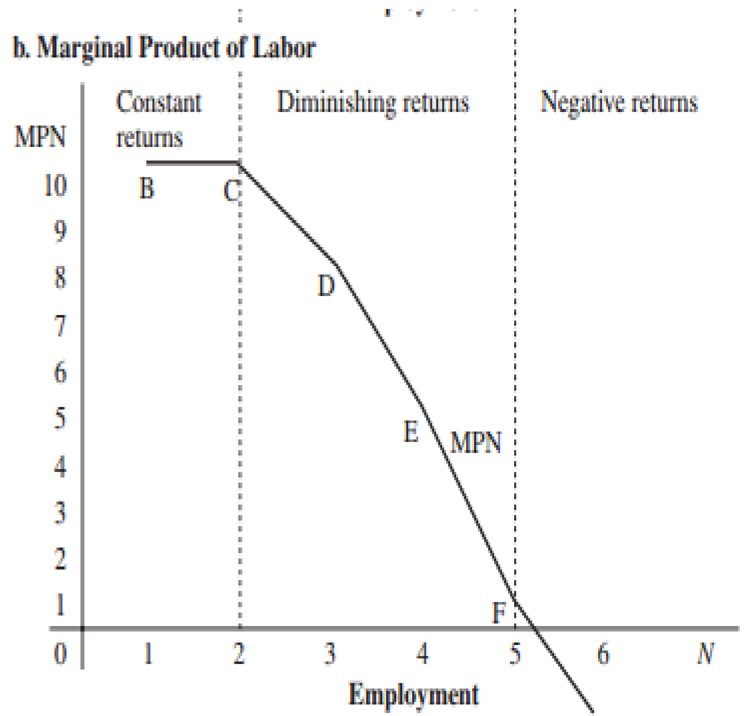
PRODUCTION FUNCTION

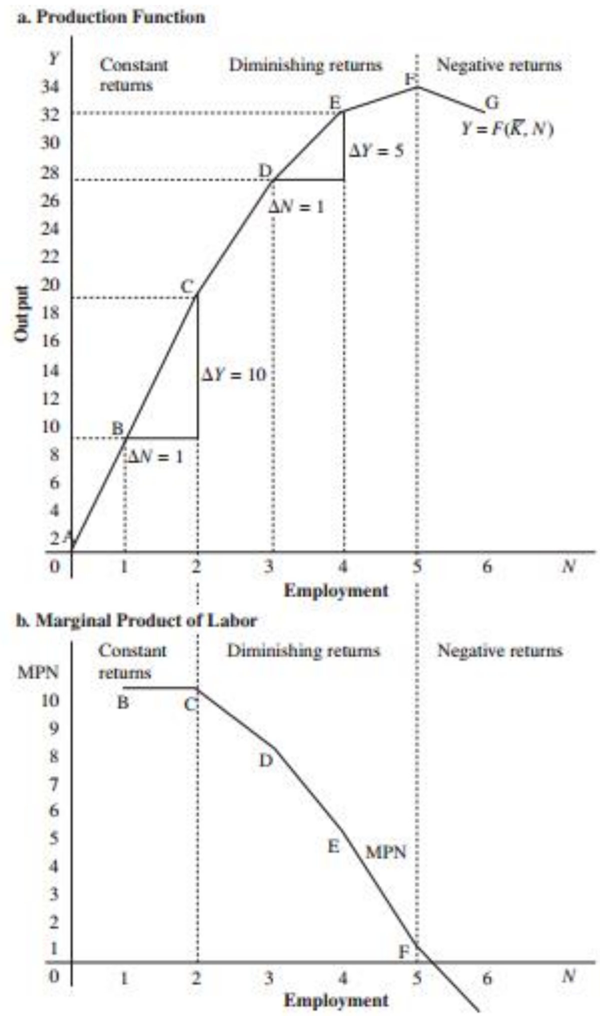
- PF



Marginal product of labour

- MPN





a. Production Function
Y
Output
Constant returns
Diminishing returns
Negative returns
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
A
B
C
D
E
F
G
$Y = F(\bar{K}, N)$
$\Delta Y = 10$
$\Delta N = 1$
$\Delta Y = 5$
$\Delta N = 1$
1
2
3
4
5
6
N
Employment
b. Marginal Product of Labor
MPN
Constant returns
Diminishing returns
Negative returns
10
9
8
7
6
5
4
3
2
1
0
B
C
D
E
F
MPN
1
2
3
4
5
6
N
Employment

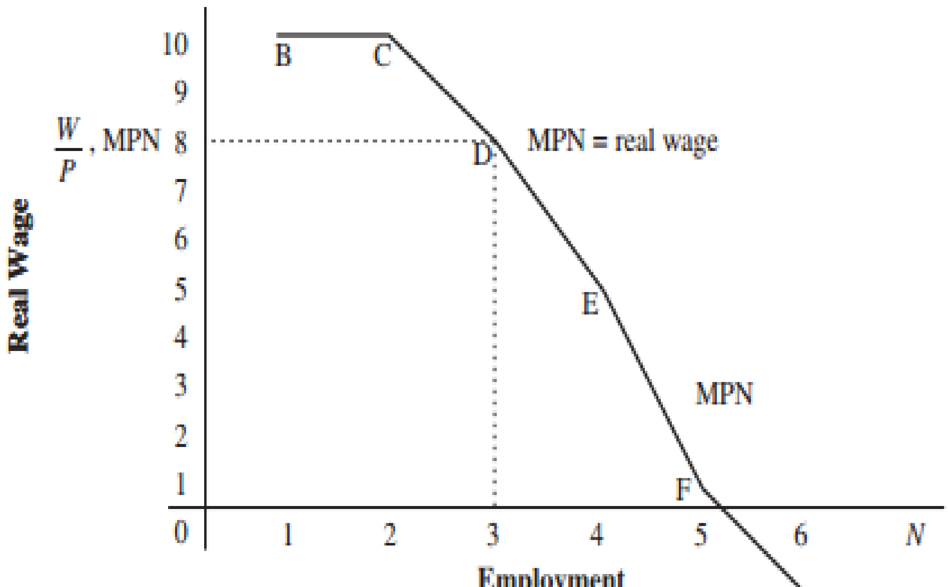
Labour demand

- LABOUR DEMAND
- MR=MC firm equilibrium (1)
- MR=P (in Perfect competition)
- $\text{MC}_i = \dfrac{W}{\text{MPN}_i}$ (because output is function of only labor) (2)
- Putting the values of P and MC in equation 1 we get eq. (3)
- P= $\dfrac{W}{\text{MPN}_i}$ (3) (
- Multiplying both sides of equation by MPN and dividing both sides by *P* gives

$$\text{MPN}_i = \frac{W}{P} \qquad (4)$$

Continue…

- LABOR DEMAND (MPN=W/P)



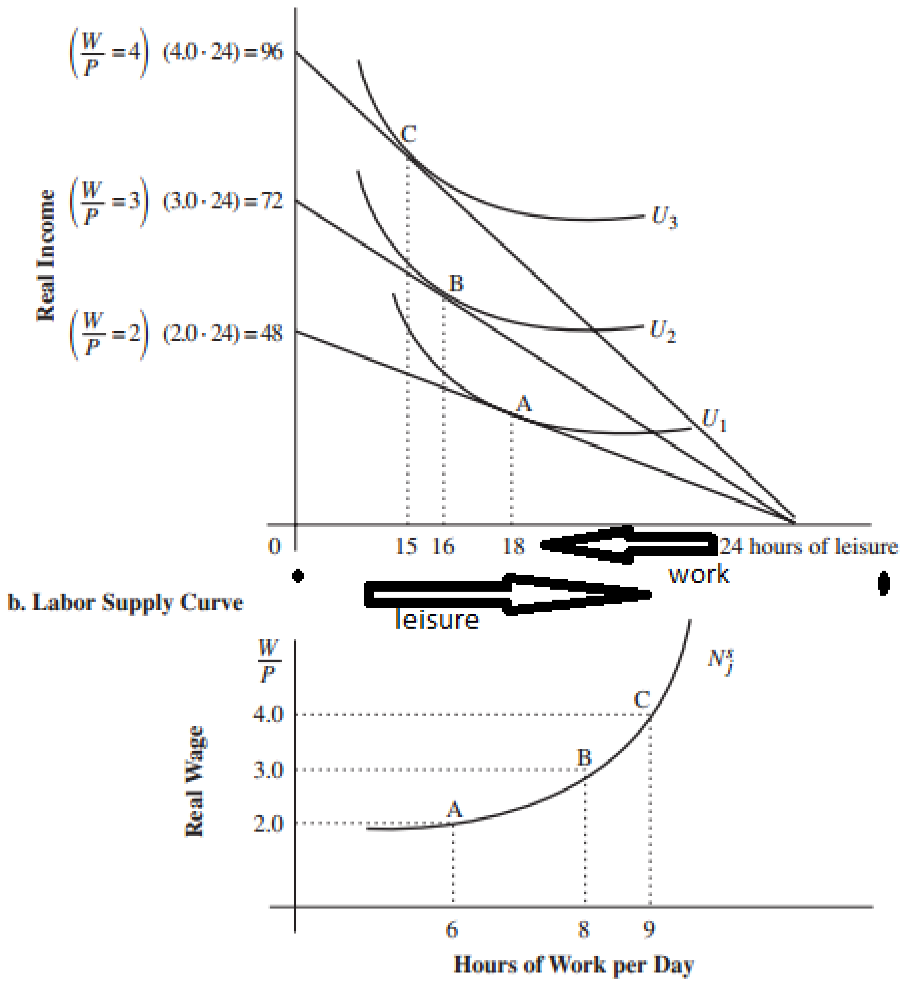
Continue…

- LABOR DEMAND

$$N^d = f\left(\underset{(-)}{\frac{W}{P}}\right)$$

Labor supply

- N^S



Labor supply

- LABOR SUPPLY

$$N^s = g\left(\underset{(+)}{\frac{W}{P}}\right)$$

EQUILIBRIUM OUTPUT AND EMPLOYMENT

- EQUILIBRIUM in labor market

So far, the following relationships have been derived:

$$Y = F(\overline{K}, N) \text{ (aggregate production function)}$$

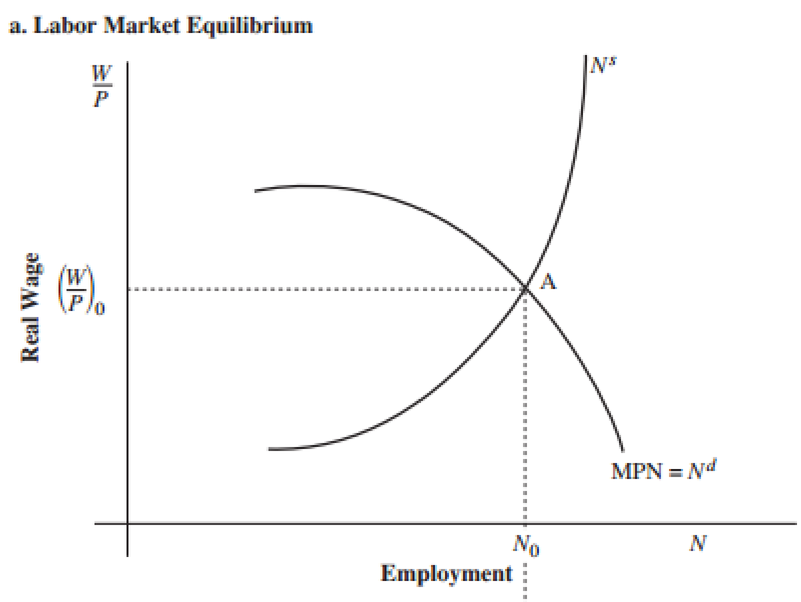
$$N^d = f\left(\frac{W}{P}\right) \text{(labor demand schedule)}$$

$$N^s = g\left(\frac{W}{P}\right) \text{ (labor supply schedule)}$$

$$N^s = N^d$$

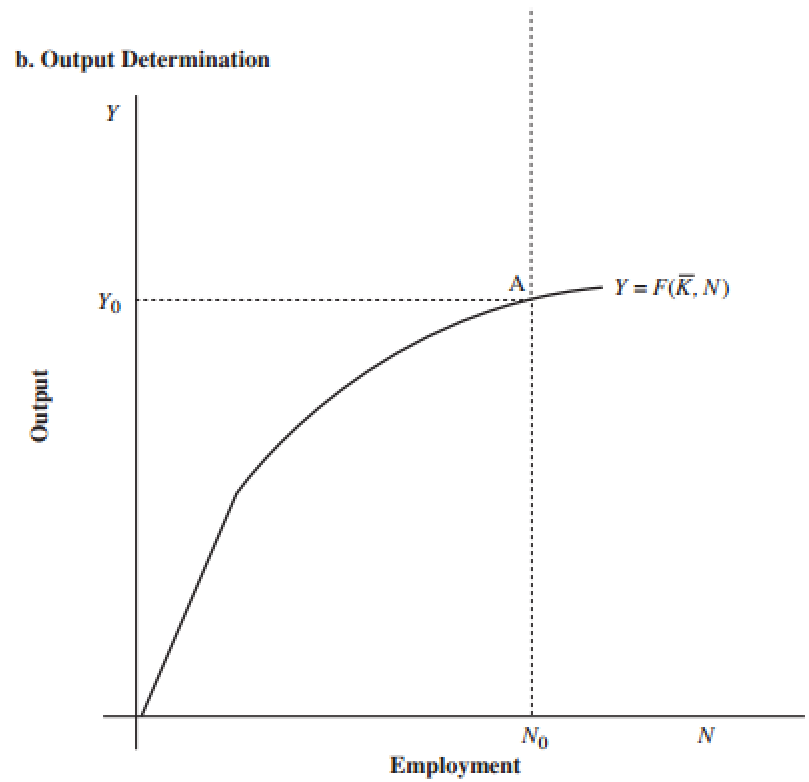
CLASSICAL OUTPUT AND EMPLOYMENT THEORY

- Graphically LABOR MARKET EQUILIBRIUM (EMPLOYMENT and real wage determination)

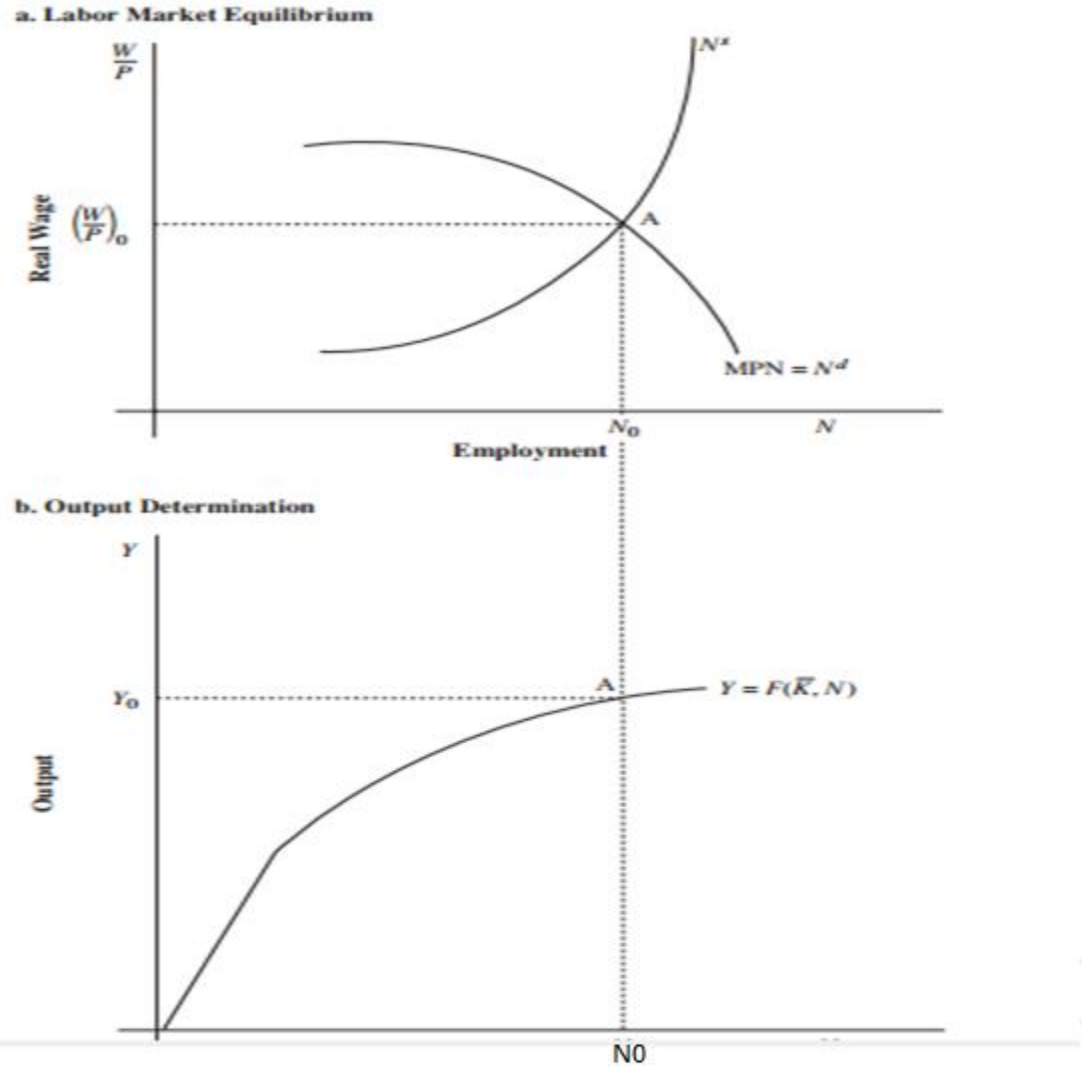


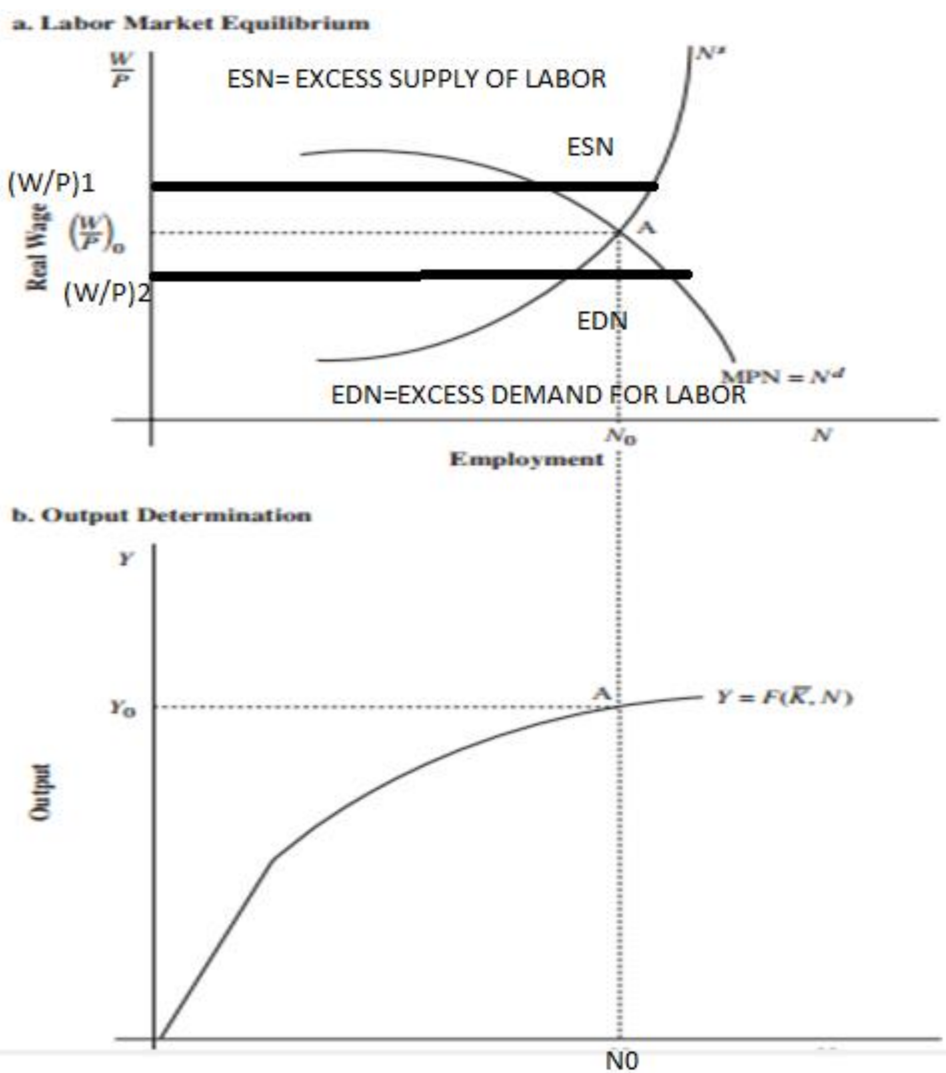
CONTINUE…

- OUTPUT DETERMINATION



DETERMINNATION OF REAL WAGES, EMPLOYMENT AND OUTPUT





a. Labor Market Equilibrium
W/P
ESN= EXCESS SUPPLY OF LABOR
N^s
ESN
(W/P)1
Real Wage
$(\frac{W}{P})_0$
A
(W/P)2
EDN
MPN = N^d
EDN=EXCESS DEMAND FOR LABOR
N_0
N
Employment
b. Output Determination
Y
Y_0
A
$Y = F(\bar{K}, N)$
Output
N0