

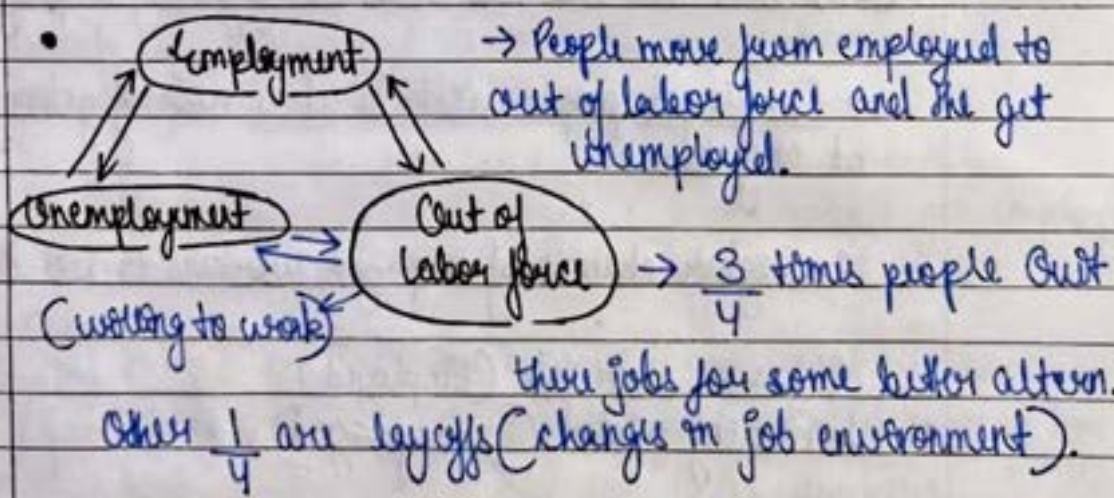
Chapter - 6. The Labor Market

6.1 * A Tour of the Labor Market :

- There are people who want to work and are looking for it and who are already working and some who don't want to.
- One out of three women are employed and in present 2 out of 3 women are employed.
- Unemployment rate is also increasing.

→ The large flows of workers -

- Sclerosis, hardening of arteries (medical term)
- Poor markets functioning with few transactions (macro term)
- In US, Movements of the workers are found from the data from a monthly Survey called Current Population Survey (CPS)



- CPS is now based on computer-assisted interviews, either in person or on laptop computers or by phone.
- CPS tells us the percentage of employed, unemployed, participates by age, sex etc.

• Employment Rate Ratio of employment to populat. available to work (not unemployment).

→ ↑ Unemployment = ↓ Employment (Out of labor force)

→ People who are not looking for a job should be not considered as unemployed as they are unwilling to work, they are considered as out of labor force.

6.2

Movements on Unemployment:

• Implications on Unemployed and Employed workers with new adjustment of firing new people:-

→ Unemployment/Unemployed people's scope on the adjustment people are getting fired or they employing fewer employees, will be just as they want to work, but they are already hiring few workers, which will decrease their chances of getting employed.

→ Employed people will be at a risk of getting fired at any time.

∴ Higher chances of employed workers to lose their job.

- ↑ Losing their job (Employed)
- ↓ Finding a job (Unemployed)

6.3

Wage Determination:

• Collective Bargaining - Bargaining between a unions and a firms. (Wages are set in this way of Bargaining)

• Wages (salaries etc) are EITHER set by collective bargaining OR by the employer OR by the bargaining between the employer and individual employee.

• \uparrow Skills = \uparrow you / one can bargain or ask for the wages.
 (A College grad cannot get a salary of a HR position as he doesn't have much experience for that position, so they can get take-it-or-leave-it type of salary at any organisation.)

• Negotiations are based on industry level, national level etc.

• Negotiations are based.

• Contract agreements are applied only on the firms that have signed them.

OR

• Contract agreements are applied on the whole firm automatically or the whole economy. (who didn't even signed)

"2 Facts"

→ Workers are paid a wage which exceeds their expectations which they accept and choose to be employed over being unemployed. (Reservation Wage)

→ \uparrow Unemployment = \downarrow Wages. (More people get employed so wages are also high)

§ If there's no collective bargaining, workers have some bargaining power and secondly firms can also pay for high wages which they give to the workers for many diff. reasons.)

» BARGAINING : Two factors on which this power depends on :-

- (A) > How costly it would be for the firm to replace him/her.
- (B) > How hard it would be for him/her to find another job.

→ (A) situation is high, ~~then~~ I like if it would be very costly for the firm to replace him/her, then the (B) situation, for ex. the possibilities of him/her getting any other job will be very easy.

Ex: A firm is / can't do anything without that one particular employee, it means he/she is contributing a lot in the firm and must be very experienced, so if he'll/shi'll leave that job and starts getting interested so they'll get the job easily.

And this will eventually tell us that the bargaining power of this employee will be very high in comparison to any other less ~~some~~ experienced employees, and every firm will easily provide the wage that employee will ask for according to his/her experience.

HENRY FORD & EFFICIENCY WAGES:

>> Ford company's owner, Henry Ford started to pay their employees. He gave a raise to his employees so that they'll stay and ~~to~~ work efficiently and effectively and with dedication, which helped his company increase its profits.

>> EFFICIENCY WAGES:

• Henry Ford example: efficiency wage theory.

» Skill depends on two factors:

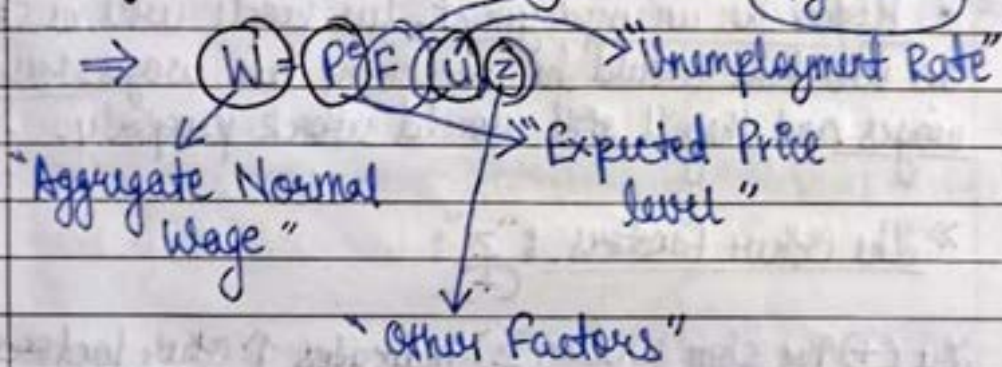
→ Firms - high tech firms which provides more wages such as efficiency wage which avoid them to quit.

→ Labour market - ↓ Unemployment = Efficiency wage.
↑ Unemployment = Reservation wage.

- Low unemployment rate attracts more employed person to seek other better opportunities.

&
Vice Versa

» Wages, Prices and Unemployment:



» Expected Price Level: "P^e":

Workers • Real & Nominal Wages -
• Wage = $\frac{W}{P}$
the good they want to buy

Firms Wage = $\frac{W}{P}$
the good they sell

If both workers & firms expect the price level to double, they will agree the X2 the nominal wage, keeping the real wage constant.

→ the expected price level X2 = X2 nominal wage.

Example: In Union contracts, US nominal wages are already set in advance based on what price level will be in 3 years.

Even if that "expected" price level will not be as planned, they'll still not care that will it be readjusted or not.

» The Unemployment Rate: "u":

The (-)ve sign under (u) indicates \uparrow in employment & \downarrow in wages.

• Lower the unemployment, more people will be there to be employed so workers would be receiving more wages, that are efficiency wages and will have more bargaining power.

Wage Versus

• Higher the unemployment, less people will be employed so workers would be receiving less wages, reservation wages and they'll still would work properly.

» The Other factors: "z":

The (+)ve sign under (z) indicates \uparrow other factors & \uparrow nominal wage.

• For ex: Unemployment Insurance, Insurance/money/prize provided to the workers who lose their job and can't find another.

Suppose ①: Unemployment Insurance doesn't exist, workers who lost their job wouldn't be able to have any other jobs or any higher wages, & will work for any work.

②: Unemployment Insurance does exist, workers who lost their job would be able to have a high wage job and the employment will lower.

∴ \uparrow Unemployment = \uparrow Wages.

→ Minimum Wage - an amount that is paid to the workers which cannot be decreased.

→ Average Wage - Aggregate, Salary of a group of workers.

∴ \uparrow Minimum Wage = \uparrow Average Wage. (W)

(at a given unemployment rate, (u))

→ Employment Protection: Rules, laws that protect an employer's subjects.

\uparrow Employment Protection = \uparrow Wages of workers.

(Coz laying off workers is more expensive, so they increase the wages of workers).

6.4 Price Determination:

» Prices are set according to the nature of production function.

(Relation between the inputs used in production and the quantity of output produced.)

Assume the only factor of production to produce goods is "LABOR".

→ Production Function → $Y = AN$ (Employment)

(Output) (Labor productivity)

⇒ X2 Workers (Labor in production)
= X2 Output they produce!

- In Reality, firms use other factors of production too,
like, Capital: Machines & factories.
Raw Materials: Oil.

Assuming (A), labor productivity is constant.

$$= \underline{Y = N} \quad (\text{Production Function})$$

One unit of output = One more worker at (W) wage.

⇒ If Marginal Cost (cost of producing one more unit) P is equal to W , they would be in a perfect competition.

$$\therefore \underline{P = W}$$

But every good is not perfectly competitive, firms charge higher price than Marginal Cost.

$$\therefore \text{Assume } \Rightarrow P = (1 + m)W$$

(markup of the price over the cost)

→ If market would be perfectly competitive, $m = 0$, but it is not so, P will \uparrow with a factor of $\frac{1+m}{1}$ with W

$\therefore P = (1+m)W$

6.5 The Natural Rate of Unemployment -

" Assuming $\boxed{\text{Nominal Wage} = P}$ (actual price level) not P^e (aggregate W , expected price level.)

Under this, Wage and Price setting determine the equilibrium.

(natural) rate of unemployment.

>> Wage Setting Relation:

With Assumption, Nominal Wage = P :

(Real Price Wage) $W = P F(u, z)$ (Unemployment Rate) (Other Factors)

Dividing the side by P :

$\frac{W}{P} = F(u, z)$
(- , +)

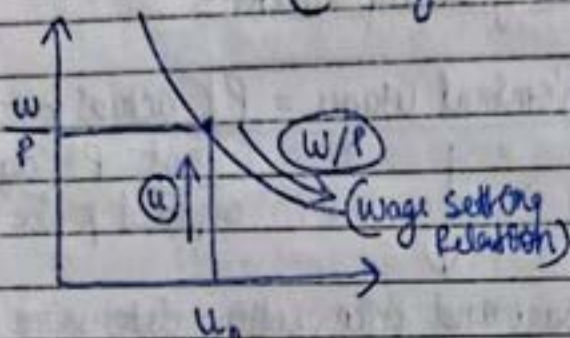
Here, $\frac{W}{P}$ (Wage determination) implies that the (Real Wage) u has negative relation b/w (Unemployment Rate) $\frac{W}{P} \& u$

→ $\uparrow u = \downarrow W/P$

∴ Unemployment Rate \uparrow , Bargaining position \downarrow
 because there'll be more people unemployed and
 to hire so, the wage will be \downarrow .

Hence, ∴ $\uparrow u = \downarrow w/p$.

(Wage Setting Relation)



(Downwards
Sloping)

as negative relation.

⇒ Price - Setting Relation:

Here, we gonna take the Price determination's equation
 i.e. " $P = (1+m)W$ ".

Now, dividing the equation by nominal wage:

$$\Rightarrow \frac{P}{W} = 1+m \quad (\text{markup of the price over the cost})$$

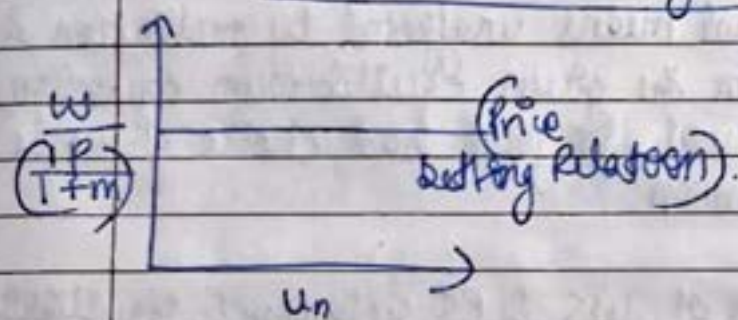
Inverting the equation to get the real wage:

$$\frac{W}{P} = \frac{1}{1+m}$$

⇒ Markup Price = The price that is how much
 more a company's selling price
 is than the cost of the company.
 (Actual)

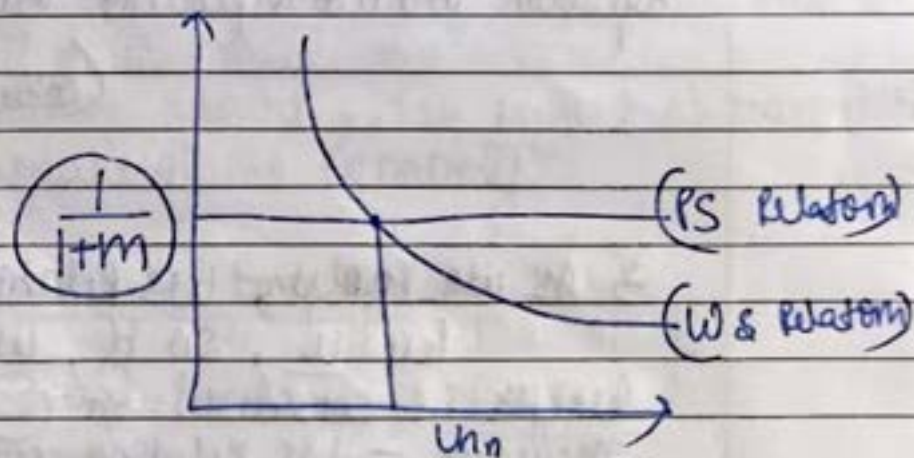
\Rightarrow If every company \uparrow its markup price, but you're still getting same (constant) nominal wage, it will \downarrow the real wage too as your consumption / buying power will also \downarrow as your nominal wage is constant but all products markup are \uparrow , is expensive, which is why price-setting relation says: $\frac{w}{p} = \frac{1}{1+m}$ (Price Setting Relation)

$\uparrow m = \downarrow$ Real wage



\therefore Not determined by the unemployment rate!

Both \therefore



\gg Equilibrium Real Wage & Unemployment:

\therefore Equilibrium in labor market requires

Real Wage in (Wage Setting Relation = Price Setting Relation)

$$\text{i.e. } \Rightarrow \frac{w}{p} \Rightarrow F(u_n, z) = \frac{1}{1+m}$$

(equilibrium equation)

The equilibrium unemployment rate u_n is called the Natural Rate of Unemployment (u_n).

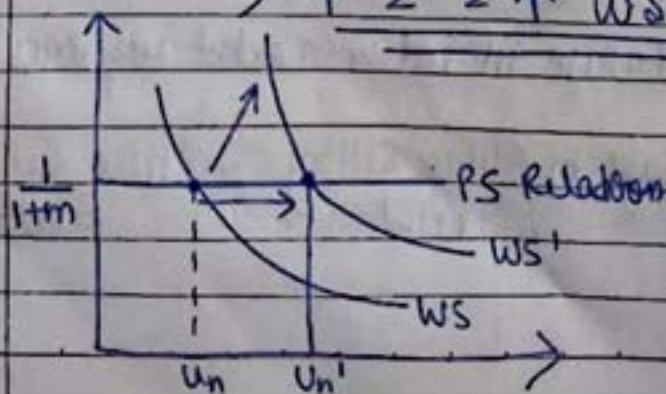
⇒ Here, natural means unaffected by institution & policy, but in the given equilibrium equation, nothing is Natural, it's just bad choice of words for this equation.

⇒ These curves of WS & PS relation & equilibrium equation are all dependent on z and m .

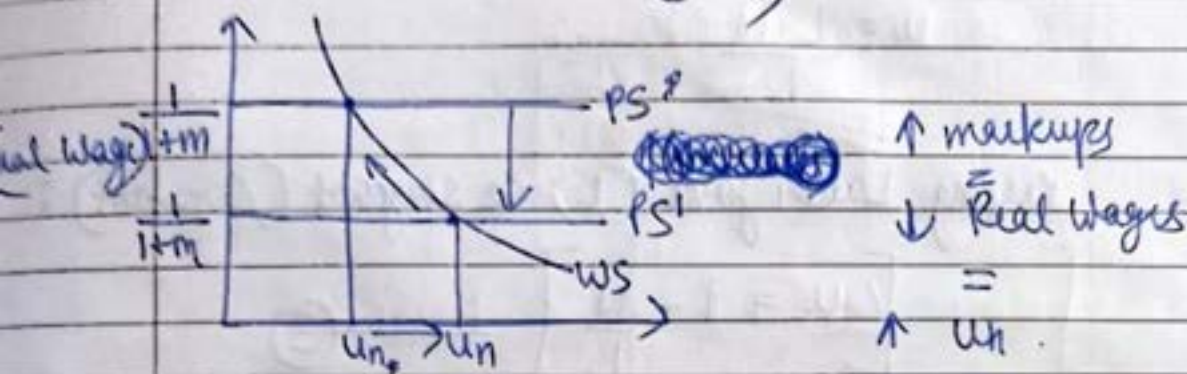
(other factors) (markup price over cost)

⇒ As we know, WS Relation is determined by u , so if unemployment benefits i.e. considered in z (other factors) increases = WS Relation curve also increases and moves to the right.

⇒ $\uparrow z = \uparrow$ WS Relation (Real Wage)



⇒ Increase in markups = ↓ Real Wages
and ↑ in natural rate of unempl.
(u_n)



∴ Instead of Natural Rate of Unemployment it should be "Structural Rate of Unemployment."

because factors in this equation like ~~the~~ "plentiful (Full of) of unemploy. benefits" are

not a result of nature, they reflect characteristics of the structure of the economy.

⇒ Unemployment to Employment :

u = unemployment rate

U = Unemployment

L = Labor force

N = Employment.

" $u = 1 - \frac{N}{L}$ " ⇒ (1) $u = \frac{U}{L}$ [unemployment rate is Unemployment / Labor force]

(2) ⇒ $U = L - N$ [Unemployment is equal to labor force minus employment]

So, $u = \frac{U}{L}$ i.e., with the help of equation (2)

$$u = \frac{L-N}{L}$$

Keeping Labor force (L) as stagnant (constant):

$$\left[u = 1 - \frac{N}{L} \right] \text{ --- (3)}$$

~~From Employment to Output:~~

Equating 3rd equation to get employment:

$$\Rightarrow u = 1 - \frac{N}{L}$$

$$\Rightarrow \frac{N}{L} = 1 - u$$

$$\Rightarrow \underline{N = L(1-u)}$$

If NATURAL Rate of Unemployment is (u_n) . So, NATURAL Rate of Employment is :-

$$N_n = L(1-u_n)$$

For ex, 150 million is the Labor force & 5% is Natural Unemployment Rate, ∴ the Natural Employment Rate will be :-

$$N_n = 150 \left(1 - \frac{5}{100} \right)$$

$$N_n = 150 \left(\frac{100-5}{100} \right)$$

$$N_n = 150 \times \frac{95}{100}$$

$$N_n = \frac{1425}{10}$$

$$\underline{\underline{N_n = 142.5 \text{ million}}}$$

» From Employment to Output:

As we know, the production function is $Y = N$

$$\text{Output} = \text{Employment}$$

⇒ One unit of output = One more unit of workers at wage.

So,

∴ Natural Rate of (Output = Employment)

$$\therefore Y_n = N_n$$

So, in the equation:

$$\underline{\underline{Y_n = N_n = L(1-u_n)}}$$

$$\therefore \underline{\underline{Y_n = L(1-u_n)}} \text{ --- (9)}$$

Now, By using 4th equation in the equilibrium equation i.e., :-

$$\Rightarrow F(u_n - z) = \frac{1}{1+m}$$

$$u_n = \frac{y_n}{L}$$

$$u_n = \frac{y_n}{L} (1)$$

$$u_n = 1 - \frac{y_n}{L}$$

$$u_n = 1 - \frac{y_n}{L}$$

So, hence:

$$F\left[\left(1 - \frac{y_n}{L}\right) - z\right] = \frac{1}{1+m}$$

\therefore Left side of the equation i.e.,

$$F\left[\left(1 - \frac{y_n}{L}\right) - z\right]$$

is the Wage (Real) chosen in wage setting relation.

\therefore Right side of the equation i.e.,

$$\frac{1}{1+m}$$

is the real wage chosen in price setting relation.

Summarizing

• " $F\left[\left(1 - \frac{y_n}{L}\right) - z\right]$ " is the wage setting relation's equation

which is Decreasing / Downward.

• $\frac{1}{1+m}$ is the real wage chosen in price setting relation
is constant.

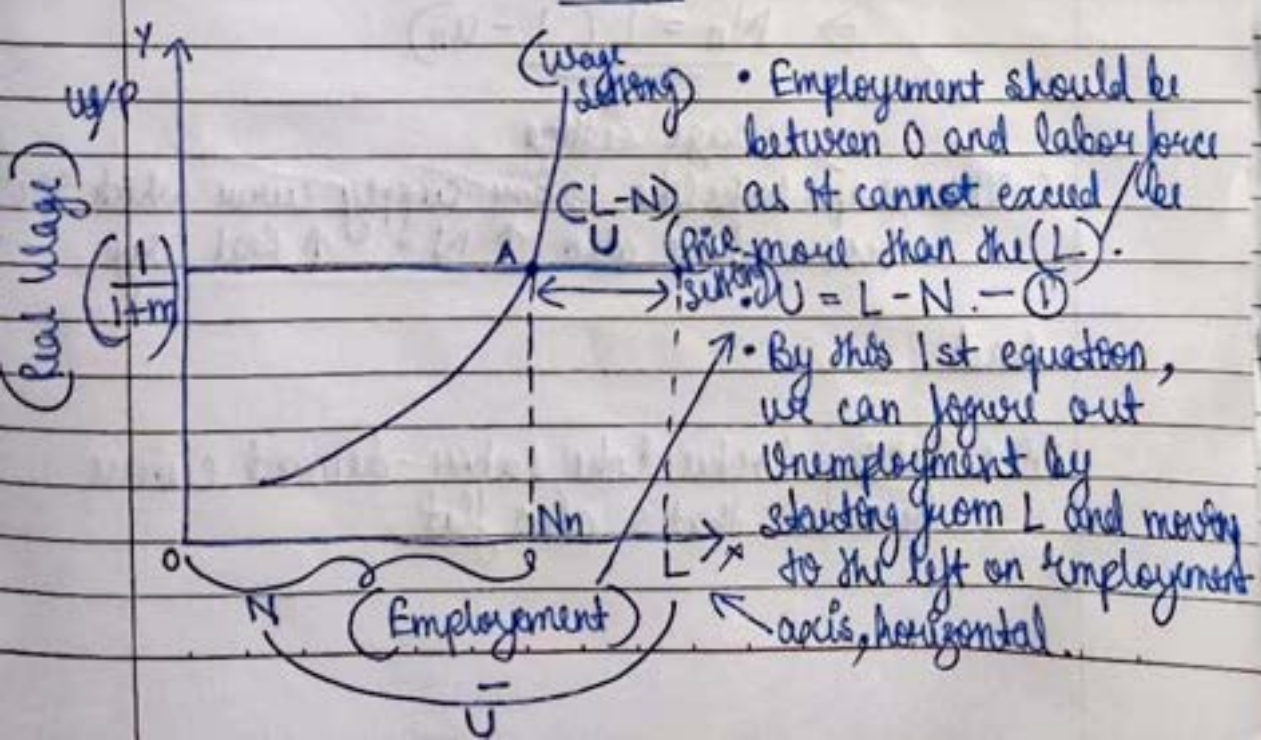
• In Labor Market, Equilibrium is derived when the real wage chosen in Wage setting = Price Setting.
 → This is known as "Equilibrium Unemployment Rate".

• Equilibrium Unemployment Rate is also known as the Natural Rate of Unemployment.

• With Natural Rate of Unemployment, we derived Natural Rate of Employment and Output.

→ APPENDIX : Wage & Price Setting relations
V/s
Labor Supply & Labour Demand

» Here we are gonna redraw the wage and price setting relation but not with UNEMPLOYMENT. but with EMPLOYMENT.



Characterizing the equilibrium

- An \uparrow in Employment = \downarrow Unemployment.
(Right shift in graph = Left shift in graph on horizontal axis)

$\therefore \uparrow$ Real Wage chose in Wage Setting.

Thus, Wage Setting relation is an UPWARD slope.

$\therefore \uparrow$ Employment = \uparrow Real Wage.

- Price setting relation is still a horizontal axis, as $\frac{w}{P} = \frac{1}{1+m}$.

- A is the equilibrium rate i.e. Natural Rate of Employment, taken from the natural rate of unemployment:

$$u_n = \frac{L - N_n}{L}$$

$$\Rightarrow \underline{N_n = L(1 - u_n)}$$

- \therefore This graph looks like Labour-supply curve which is upward sloping because here also $\uparrow N = \uparrow$ Real Wage.

And

Price Setting looks like labour-demand curve because that's also flat.

- The labor supply relation says:

\uparrow Wage = \uparrow Employment (Amount of workers to work)

- Labor-demand relation gives employment at a given real wage.