

FINALLY, PUTTING IT ALL TOGETHER: AS-AD

Up to now, we have mainly discussed the *demand* side of the economy, treating the level of prices as a given

But last lecture we discussed the determination of the price level. So now we can put *supply* into the story too

The idea is that prices and output are “jointly determined” by two relationships: *aggregate demand* and *aggregate supply*

AGGREGATE SUPPLY

Our simple wage-price model:

$W = P^e F(u, z)$ (wage depends on expected prices, unemployment, and other stuff)

$P = (1+\mu) W$ (prices are a markup on wages)

Put them together, we have

$P = P^e (1+\mu) F(u, z)$

But unemployment rate is $1 -$ ratio of employed to total work force:

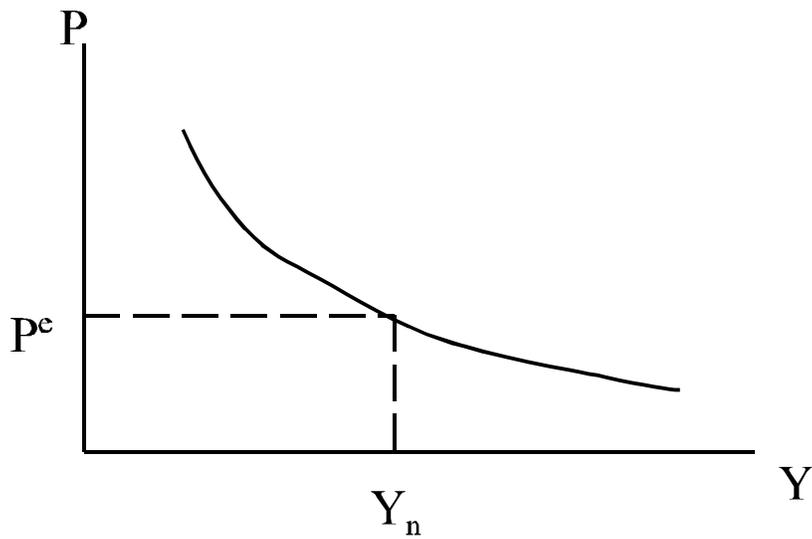
$u = 1 - N/L$; or since N proportional to Y ,

$u = 1 - Y/L$

So $P = P^e (1+\mu) F(1 - Y/L, z)$

1. Higher expected price level means proportionally higher actual price level, other things equal

2. Higher output means higher price level, because wages are bid up and passed through to prices



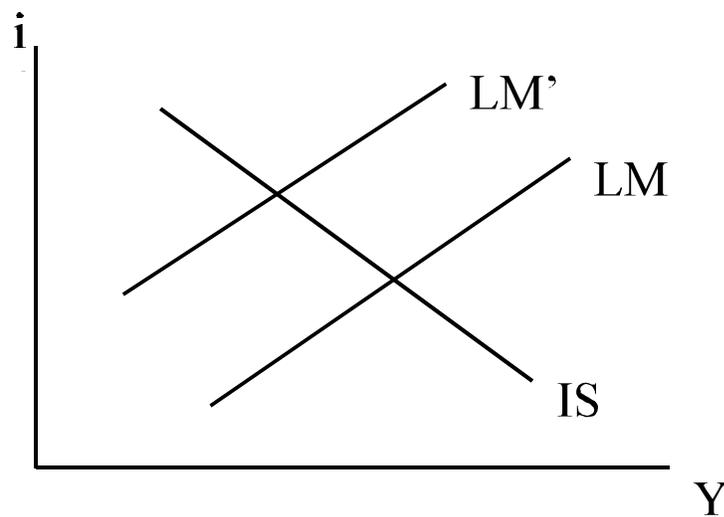
“Natural” level of output is where actual price level equals expected. A somewhat abstract idea - but very important for analysis.

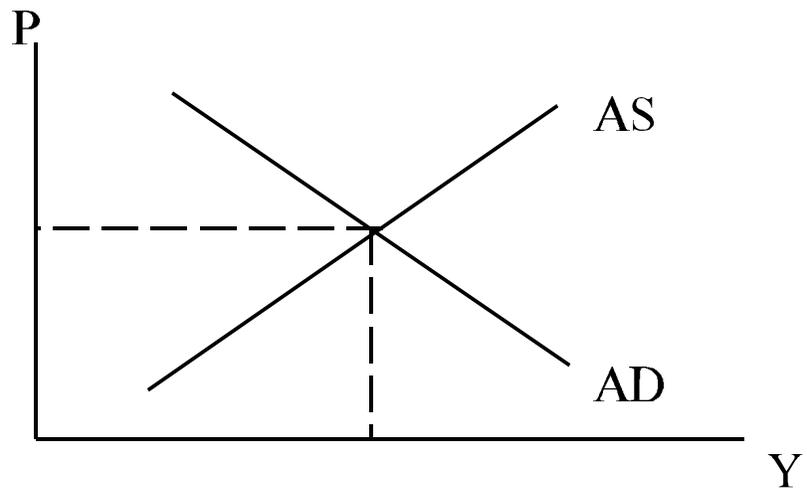
AGGREGATE DEMAND

$$\text{IS: } Y = C(Y-T) + I(Y, i) + G$$

$$\text{LM: } M/P = L(Y, i)$$

Higher P *shifts the LM curve* - just like a decline in money supply





Consider an increase in M:

DYNAMICS: The expected price level shifts over time

Simplest assumption (will be modified later): $P^e = P_{t-1}$

So AS becomes $P_t = P_{t-1} (1+\mu)F(1-Y/N, z)$

Implies *long run tendency toward natural output and unemployment*

Logic: If $Y > Y_n$, then $P > P^e = P_{t-1}$. So P^e will be revised upward, shifting AS upward. Over time P will rise, Y fall.

MONETARY EXPANSION AND “NEUTRALITY”

In the short run, M increase means Y up and i down. In the long run, P rises in proportion to M; nothing else is affected