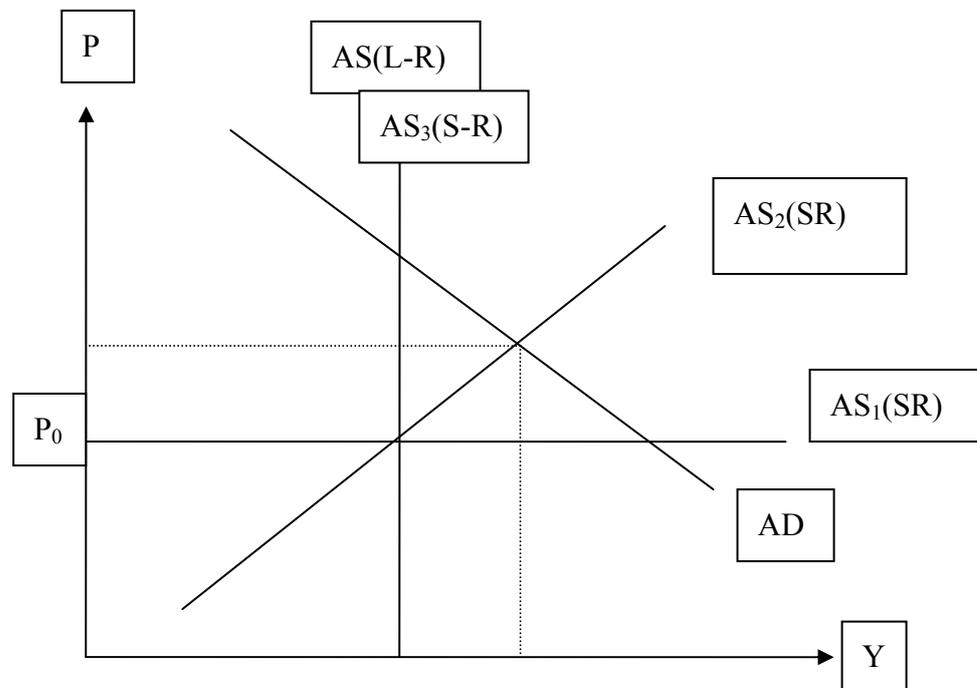


The AS Curve

From the Phillips Curve, we can derive a link between price and output, i.e. aggregate supply (AS). The crux is the form of expectations. Adaptive expectations (AE) will produce a normal looking, upward sloping AS curve. However, should expectations always be adaptive?

The key factor is the behaviour of prices: output as well as input prices in the production process. Recall the production function: $Y = Y(K, L)$.

The Short-run aggregate supply (AS) curve may be of various slopes and shapes:



If the price level is fixed, the curve will be $AS_1(SR)$ ---a horizontal AS curve. It will be the case if there is plenty surplus productive capacity in the economy.

On the other hand, if GDP is always fixed at the potential real level, or “natural real GDP”, the curve will be $AS_3(SR)$ ---a vertical AS curve.

A third possibility is $AS_2(SR)$ ---a positively sloped AS curve, where the

shift in the AD curve will produce some output and some price effects.

If we assume that $K = \bar{K}$ in the SR, then the issue remains for the labour market—the supply and demand for labour and the importance of the real wage (W/P).

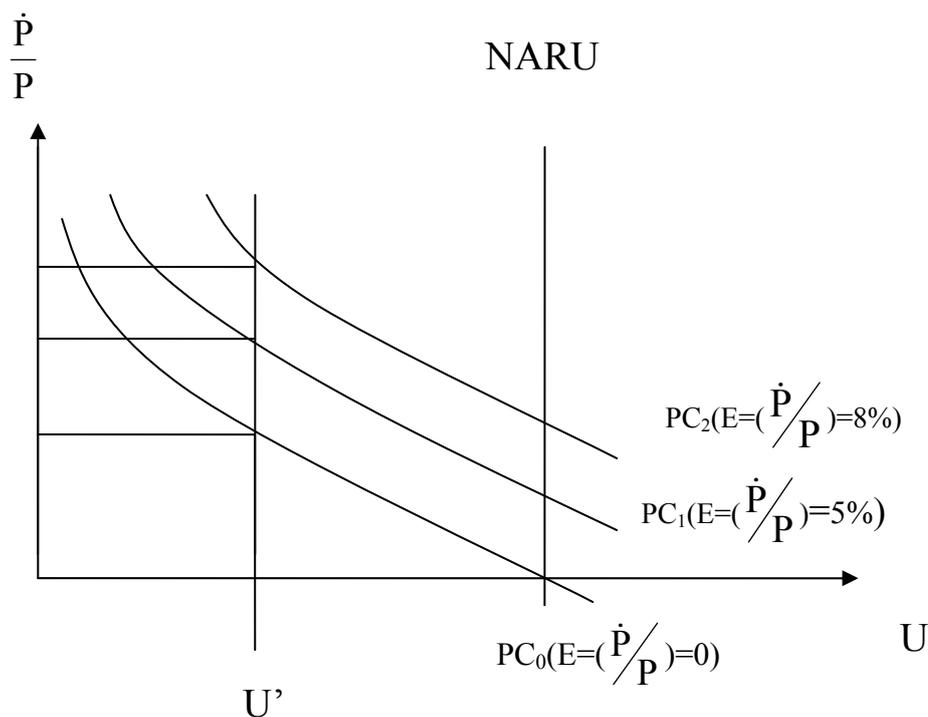
The AE augmented Phillips Curve implies that the short run AS curve is something like $AS_2(SR)$ —a positively sloped supply function *if full employment is not yet attained*.

So the government can use fiscal or monetary policies to shift the AD curve and increase output in the SR, although the cost is some inflation.

Moreover, in the L-R, the problem of inflation may deteriorate. Recall the equation:

$$\frac{\dot{W}}{W} = f(U) + \alpha E\left(\frac{\dot{P}}{P}\right) \quad \text{----- (5)}$$

So inflation expectations become the shifting variable in the AE augmented Phillips Curve:



So if the authority keeps the unemployment rate below the natural rate of unemployment (NARU), the actual inflation rate will always be higher than the expected inflation rate. People will adjust their expectations, even though only adaptively. In other words, they will demand higher wage and price increases. The AE augmented Phillips Curve will shift outwards continuously. That is called the hypothesis of accelerating inflation; or the worsening of the inflation-unemployment trade-off.

Hence, the cost of keeping unemployment below NARU will be **accelerating inflation**. The process will stop only when the government allows the unemployment rate to go back to NARU.

However, the L-R equilibrium condition, i.e. $\left(\frac{\dot{P}}{P}\right)_t = \left(\frac{\dot{P}}{P}\right)_{t-1}$

will then be achieved only by “permanently” higher than zero.

Nevertheless, it should be pointed out that the whole process can be **reversed** if the government deliberately keeps unemployment **ABOVE** NARU! Then the actual inflation rate will be lower, not higher, than the expected one. People will adjust their expectations adaptively and the Phillips Curve will shift inwards continuously. So a process of decelerating inflation or improving unemployment-inflation trade-off will unfold until unemployment falls back to NARU.

All in all, there will be an unemployment-inflation trade-off in the S-R, but not in the L-R. The L-R unemployment is determined by the NARU.

Hence, under the theory of AE augmented Phillips Curve, the L-R aggregate supply curve will be vertical instead of upward sloping.

That is the theory. What about reality? And what if expectations become “rational”? Even in the S-R?