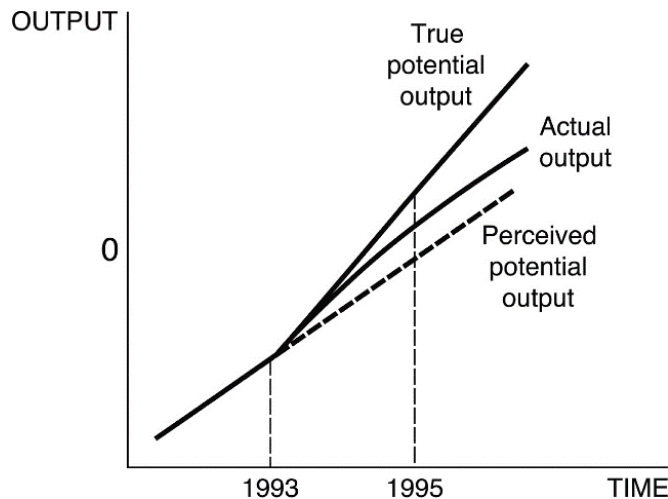


Due: 11/5, at 11:59pm (via eLearning)

- Using the graph below, explain how not estimating potential real GDP (output) accurately can lead to implementing the wrong monetary policy.



Here the central bank mistakenly thinks the economy is in an expansion because actual output is thought to be above potential output. However, the true potential output is above actual output, so the economy is in a recession instead. As the central bank thinks the economy is expanding too much it may increase rates to prevent inflationary pressures but in reality the economy is under performing relative to its potential (and likely in a recession) and with this policy the bank is actually pushing the economy towards a deeper recession.

- The formula below represents a possible monetary policy rule:

$$R_t - \bar{r} = \bar{m}(\pi_t - \bar{\pi})$$

Explain what each variable represents and what each side of the equation represents.

R_t represents the real interest rate

\bar{r} represents the marginal product of capital

\bar{m} represents how strongly the central bank reacts (in terms of interest rates) to inflation being above or below its target

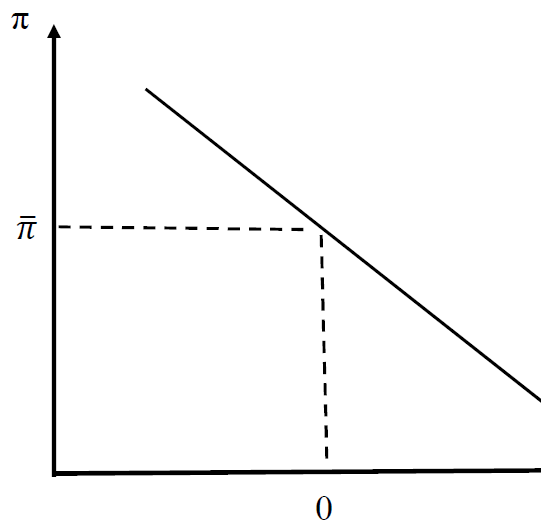
π_t represents the inflation rate

$\bar{\pi}$ represents the inflation rate target

The right-hand side of the equation represents how strongly the central bank is going to react to actual inflation deviating from the target inflation rate.

The left-hand side represents how much the real interest rate deviates from the marginal product of capital. In other words, the relationship between the cost of borrowing (R_t) to the return on that borrowing (\bar{r}).

3. **Graph the aggregate demand curve. Is the statement “A higher value for \bar{m} leads to a smaller decrease in output when inflation increases” true or false? If it is true, explain why. If it is false, explain how it needs to change to be true.**



Whenever inflation is above or below its target, then \bar{m} is going to dictate by how much the central bank is going to change interest rates as a response. A *higher* value for \bar{m} indicates that the central bank will change the interest rate to a *greater* degree when inflation is above its target, which leads to a *larger* decrease in output. Therefore, the statement is false. It should say ‘larger decrease’ instead of ‘smaller decrease’.

4. **The aggregate demand (AD) curve looks a lot like a regular demand curve. However, the reason it slopes down from left to right is different. What is the reason that the AD curve slopes down? Explain.**

The AD curve slopes down from left to right because of the monetary policy rule. When the inflation rate increases above its target, the central bank will raise interest rates. The rise in interest rates will decrease short-run output. The opposite will occur when the inflation rate is below its target. This is why there is a negative relationship between the inflation rate and short-run output, which is what is depicted with the AD curve.