

Week 6

Solution to exercise 7 : Okun's Law

The Okun's Law is given by

$$u_t - \bar{u} = -(1/2) \tilde{Y}_t \quad (1)$$

u = unemployment rate

\bar{u} = natural unemployment rate

\tilde{Y} = output gap (or short run output)

(a) Given that $\bar{u} = 6\%$, then

| | Year 1 | Year 2 | Year 3 | Year 4 |
|---------------|--------|--------|--------|--------|
| \tilde{Y}_t | +1% | 0% | -1% | -2% |
| u_t | 5.5% | 6% | 6.5% | 7% |

$$u_1 - 6\% = (-1/2) \tilde{Y}_1$$

$$\begin{aligned} u_1 &= -(1/2) 1\% + 6\% \\ &= 5.5\% \end{aligned}$$

the other values will be calculated exactly the same way.

(b) Now we have the opposite case :

→ We know u_t

→ We need to calculate \tilde{Y}_t

As $\bar{u} = 6\%$, then

| | Year 1 | Year 2 | Year 3 |
|---------------|--------|--------|--------|
| \tilde{Y}_t | 0% | -2% | 4% |
| u_t | 6% | 7% | 4% |

$$\left\{ \begin{array}{l} u_t - 6\% = -(1/2) \tilde{Y}_t \\ 6\% - 6\% = -(1/2) \tilde{Y}_t \\ \tilde{Y}_t = 0\% \end{array} \right.$$

The other values will follow the same logic.