

Macroeconomics II - Problem Set 3

Topic 3: The Natural Unemployment Rate and the Phillips Curve

- 1) Assume the following values: $\mu = 0.06$, $z = 0.11$, and $\alpha = 0.5$. Now, suppose that the Central Bank tries to set the unemployment rate at period t in 7 percent:
 - a) Compute the inflation rate at period t that is consistent with this objective.
 - b) Plot the Phillips Curve, and point out both the inflation and unemployment rates at period t .
- 2) Suppose that the Phillips Curve is given by,

$$\pi_t = (\mu + z) - \alpha u_t$$

and explain graphically how the inflation rate is affected by a decrease in:

- a) μ
- b) z
- c) α

Topic 4: Inflation, activity, and the growth rate of nominal money

1. Assume that the Modified Phillips curve is given by:

$$\pi_t = \pi_t^e + k - 2u_t$$

where k is a constant, and $\pi_t^e = \pi_{t-1}$. In the initial situation, period t , the unemployment rate is located at its natural level, and the inflation rate is 12 percent. The Central Bank wants to reduce the rate of inflation, so it sets as an objective to keep the unemployment rate one percentage point above the natural rate of unemployment, until the inflation rate falls to 2 percent.

- a) Compute the natural unemployment rate.
 - b) Compute the inflation rate at periods $t + 1$ and $t + 2$. Obtain also the sacrifice rate.
2. Consider the following data:

	Country A		Country B	
	t=0	t=1	t=0	t=1
Inflation rate (%)	20	14	20	14
Unemployment rate (%)	10	16	10	14
Output growth rate (%)	6	-4	6	-14
Nominal money growth rate (%)	26	10	26	0

Obtain the values for α and β , assuming that $u_n = 10\%$ and $g_{\bar{y}} = 6\%$ in both countries.