

# New Economic School

## Macroeconomics 2

### Optional problem set 6

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Not to be submitted for course credit

#### 1. True, False, Uncertain. Explain your answer.

- (a) The New Classical model of supply predicts that past values of monetary growth should not affect real activity.
- (b) The theory of rational expectations suggests that macroeconomic policy has no effects. This is inconsistent with the observed correlation of monetary growth and real magnitudes over the business cycle. Hence rational expectations must be wrong.
- (c) The Neo-keynesian school of thought argues that monetary policy should be predictable because otherwise people set their inflationary expectations higher on average, and this drives the economy above the natural rate of unemployment.

#### 2. Stabilisation and commitment.

Suppose the output is given by the Phillips curve equation rewritten in terms of  $y$  :

$$y = \alpha (\pi - E\pi^e) + \varepsilon, \quad (1)$$

where  $\varepsilon_t$  is an i.i.d. shock with variance  $\sigma^2$  that occurs after private sector expectations are formed but before the Central Bank (CB) have to set monetary policy. The loss function that CB tries to minimise is

$$L = \pi^2 + \lambda (y_t - \bar{y})^2,$$

where  $\bar{y} > 0$  is the CB's target output (note that the natural output level is zero as seen in (1)).

- (a) Calculate the optimal discretionary inflation rate for any given level of expected inflation.
- (b) Impose rational expectations, and find the equilibrium inflation for any realisation of  $\varepsilon_t$ .
- (c) Compute equilibrium output for any given  $\varepsilon_t$ . Compute the expected value of the loss function.
- (d) Compute the expected value of the loss function for the credible commitment to a rule  $\pi \equiv 0$ . Compare.