

SHORT MODELLING ASSIGNMENT

ECN6660

All components carry equal marks.

Consider an economy where described by

$$(1) \quad y = E_t y_{t+1} - \sigma (R_t - E_t \pi_{t+1}) + \epsilon_t^y$$

$$(2) \quad \pi_t = \beta E_t \pi_{t+1} + \kappa y_t + \epsilon_t^\pi$$

Where y_t is the output gap, R_t is the nominal interest rate, π_t the inflation rate and it is assumed that both ϵ_t^y and ϵ_t^π are white noise processes.

Let the policy maker's loss function be given by

$$L_t = \frac{1}{2} E_t \sum_{s=0}^{\infty} \beta^s (\pi_{t+s}^2 + \lambda_y y_{t+s}^2 + \lambda_R R_{t+s}^2)$$

Use the following parameter values to solve the model: $\sigma = 0.06$, $\beta = 0.995$, $\kappa = 0.18$, $\lambda_y = 0.5$, $\lambda_R = 0.1$ and assume that the variances of the shocks are both equal to one.

- (1) Solve the model in Dynare assuming that the policy maker operates under discretion and briefly comment on your results.
- (2) Solve the model in Dynare assuming that the policy maker operates under the timeless perspective and briefly comment on your results.
- (3) Briefly discuss how and why your results differ depending on the manner in which monetary is implemented above.