

# Tarea 1

## Macroeconomía II

Pablo Herrera -Tomás Mendoza - Pablo Ramírez

Mayo 2021

Dado que  $U(c_t, l_t) = \gamma \ln c_t + \eta(1 - e_t l_t) - \frac{\theta}{2}(e_t - 1)^2$  entonces resolvemos el siguiente problema:

$$\max_{\{c_t, l_t\}_{t=0}^{\infty}} \gamma \ln c_t + \eta(1 - e_t l_t) - \frac{\theta}{2}(e_t - 1)^2$$

$$st : c_t + i_t = y_t$$

$$y_t = A_t k_t^\alpha (e_t l_t)^{1-\alpha}$$

$$k_{t+1} = (1 - \delta)k_t + \xi_t i_t$$

$$\gamma, \eta, \theta > 0$$

Las ecuaciones resultantes del proceso de optimización son las siguientes:

$$E_{t-1}\left[\frac{\gamma}{c_t}(1-\alpha)\frac{y_t}{e_t l_t} - \eta\right] = 0 \quad (1)$$

$$\frac{\gamma}{c_t}(1-\alpha)\frac{y_t}{e_t l_t} - \eta = \frac{\theta(e_t - 1)}{l_t} \quad (2)$$

$$\frac{1}{c_t \xi_t} = \beta \left[ \alpha \frac{\gamma}{c_{t+1}} \frac{y_{t+1}}{k_{t+1}} + (1-\delta) \frac{\gamma}{c_{t+1}} \frac{1}{x i_{t+1}} \right] \quad (3)$$

$$y_t = c_t + i_t \quad (4)$$

$$k_{t+1} = (1-\delta)k_t + \xi_t i_t \quad (5)$$

$$y_t = A_t k_t^\alpha (e_t l_t)^{1-\alpha} \quad (6)$$

$$\ln A_t = \rho \ln A_{t-1} + u_1 \quad (7)$$

$$\ln \xi_t = \rho_\xi \ln \xi_{t-1} + u_2 \quad (8)$$

$$u_1 \sim N(o, \sigma_A^2)$$

$$u_2 \sim N(o, \sigma_\xi^2)$$