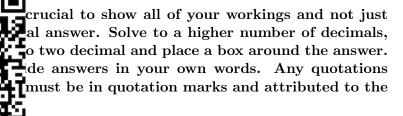
程序代码。CCS编辑辅导

Due date: Monday, 8 May, 6pm

NOTE: To receive provide a final alg but report final ni It is also importa from the textbool original source.



1. Abstracting from long-run growth by setting n = g = 0 and from persistent shocks by setting $\rho_A = \rho_G = 0$, with $A_t \equiv lnA_t - ln\bar{A}$ and $G_t \equiv lnG_t - ln\bar{G}$, and normalizing the population to N=1, the following nine equations describe (b) seline RBC model in Chapter 5:

Assignment
$$K_t$$
 = $K_t + K_t + G_t$ Exam Help (2)
$$K_{t+1} = K_t + I_t - \delta K_t$$
 (3)

$$K_{t+1} = K_t + I_t - \delta K_t \tag{3}$$

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 (4)

$$r_t = \alpha (A_t L_t / K_t)^{1-\alpha} - \delta \tag{5}$$

$$(1 - \alpha)(K_t/A_tL_t)^{\alpha}A_t \tag{7}$$

QQ:
$$749^{t}389_{e^{-\rho}E_{t}} \left[\frac{6}{C_{t+1}} (1+r_{t+1}) \right]$$
 (8)

- (a) Find the steady state for this economy under the following calibration: $\alpha = \frac{1}{3}$, $\delta = 0.05$, $\bar{r} = 0.03, A = 1$, and L = 0.5 and choose G such that G/Y = 0.2. In particular, you should find the remaining parameters values b and ρ that are consistent with steady state and determine steady-state values for the endogenous variables, \bar{Y} , \bar{C} , \bar{I} , \bar{G} , \bar{K} , and \bar{w} . (Hint: first solve for ρ using (8), then solve for K using (6), then I using (3), then \bar{w} using (7), then \bar{Y} using (2), then \bar{C} using (1), then b using (9).)
- (b) Now consider the special case of the model where $\delta = 1$ instead of $\delta = 0.05$ and $G_t = 0$ for all t (note: ρ will remain the same and b will be different, but you do not need to solve for it). Solve for Y_t , C_t , I_t , K_{t+1} , r_t , and w_t as analytical expressions of exogenous and predetermined variables A_t and K_t and constants. (Hint: with 100% depreciation, there is a constant saving rate $s = \alpha e^{-\rho}$ and constant labour supply $L_t = \bar{L}$. Given this solution to the household optimization problem, first solve for Y_t , r_t , and w_t from equations (2), (6), and (7) and then the solutions for C_t , I_t , and K_{t+1} are straightforward.)
- (c) Again, for the special case of the model, what is the percentage change in output and percentage point change in the interest rate if the economy is at steady state at time t-1, but there is a shock $\epsilon_{A,t}=0.25$ (i.e., 25%) at time t? Explain the economic

intuition belief the response of output and the integers of the marginal products of Hour and opital. (Heat, note that the $D_{A,t} = 0.231$ hock is to lnA_t , but the model solution is for the level of A_t . First solve for the steady-state level of output and then solve for output and the real interest rate given the shock.)

- with partial indexation. That is, if a firm is not visited 2. Consider Calve by the Calvo t $\bullet t$, its price in t is the previous period's price plus $\gamma \pi_{t-1}$, by the Calvo t $0 \le \gamma \le 1. \text{ Th}$ Find t is $p_t = \alpha x_t + (1 - \alpha)(p_{t-1} + \gamma \pi_{t-1})$, where α is the o tooth fairy in any given period and x_t is the price they fraction of firm a hybrid one: $\pi_t = \frac{\gamma}{1+\beta\gamma}\pi_{t-1} + \frac{\beta}{1+\beta\gamma}E_t\pi_{t+1} + \frac{1}{1+\beta\gamma}\kappa\tilde{y}_t$, $\kappa = \frac{\alpha}{1-\alpha}[1-\beta(1-\alpha)]\phi > 0$ determines the slope of set. The resul where $\beta > 0$ utput gap, and $E_t \pi_{t+1}$ is the expectation (taken at time t) of the Phillips curve, y_t is inflation at t+1.

 - (a) Show that We frat: cstutores
 (b) Use the result in (a) and the representative firm's optimal price under Calvo pricing with partial indexation being $x_t = p_t + (1 - \beta(1 - \alpha))\phi \tilde{y}_t + \beta(1 - \alpha)(E_t(x_{t+1} - p_{t+1}) + \beta(1 - \alpha))\phi \tilde{y}_t$ (c) What value of γ would lead to the highest degree of inflation persistence? What

 - (d) Now assume that $\beta = 0.9$, $\gamma = 0.5$, and $\kappa = 0.1$. Assume that the central bank has some control of the evolution of \tilde{y}_t . Suppose that the central bank announces a permanent and fully tradible deduction in the talget of state inflation rate from 7% to 2% at t=1 (prior to this, the economy was at the steady state with 7% inflation and zero output gap). Determine the cost of this disinflation episode. How much is the output gap reduce Q: 749389476

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