

淡江大學九十二學年度碩士班招生考試試題

系別：經濟學系

科目：總體經濟學

准帶項目請打「○」否則打「×」
簡單型計算機
×

本試題共 2 頁

本試題雙面印刷

- (30%) In a one-commodity Solow growth model, output is given by

$$Q(t) = (K(t))^\alpha (L(t))^{1-\alpha}$$

where $Q(t)$ is output, $K(t)$ is the capital stock and $L(t)$ is employment. Employment grows at the smooth exponential rate n per annum and there is no technological advance. Savings are a constant proportion of output, s .

 - Derive the golden rule of per capita capital stock.
 - Show that the golden rule savings ratio is just α .
 - Suppose the initial per capita capital stock was 200 units. How long would it take for the per capita capital stock to reach 90 percent of its equilibrium value, assuming that the golden rule saving ratio prevailed? Assume $n = 0.02$ and $\alpha = 0.4$.
- (20%) 這兩年來，中央銀行在貨幣政策的執行上逐漸地向釘住利率的中間目標(interest rate targeting) 靠攏。

 - 請利用 IS-LM 模型分析央行政策轉向的可能原因。
 - 並請說明釘住貨幣 (money-supply targeting) 與釘住利率 (interest rate targeting) 的優劣。
- (30%) Suppose that L_t two-period-lived individuals are born in period t and that $L_t = (1+n)L_{t-1}$. Each individual supplies one unit of labor when he or she is young and divides the resulting labor income between first-period consumption and saving; in the second period, the individual simply consumes saving and any interest he or she earns. For simplicity, let utility be logarithmic with no discounting: $U_t = \ln(C_{1t}) + \ln(C_{2,t+1})$, where C_{1t} is consumption when young and $C_{2,t+1}$ is consumption when old.

Firms act competitively with production function $Q_t = K_t^\alpha L_t^{1-\alpha}$, where Q_t is the amount of output, K_t is the amount of capital stock.

 - Solve for the steady state capital stock per capita.
 - Show how the introduction of fully funded social security affects the economy. Fully funded social security: the government taxes each young person an amount d and uses the proceeds to purchase capital. Individuals born at t therefore receive $(1+r_{t+1})d$ when they are old.
 - Show how the introduction of pay-as-you-go social security affects the economy. Pay-as-you-go social security: the government taxes each young person an amount d and uses the proceeds to pay benefits to old individuals, thus each old person receives $(1+n)d$.

◀ 注意背面尚有試題 ▶

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4. (20%) Consider an economy in which aggregate demand and supply relations are as follows:

$$AD: y_t = \beta_0 + \beta_1(m_t - p_t) + v_t,$$

$$AS: y_t = \bar{y} + \alpha(p_t - E_{t-1}p_t).$$

Where y_t is the log of real output, m_t is the log of nominal money balances, p_t is the log of price level, \bar{y} is the log of normal real output, and v_t is a random demand disturbance which is assumed to follow AR(1) process, i.e., $v_t = \rho v_{t-1} + \varepsilon_t$.

Now suppose the monetary authority conducts policy according to

$$m_t = \mu_0 + \mu_1 p_{t-1} + e_t,$$

where e_t is white noise unrelated to the v_t process.

- (a) Solve for p_t and y_t .
 (b) Is money neutral in the short run and in the long run?