

(一) 複選題 [10 題，每題 3 分，共 30 分，全對才給分]
※ 注意：請於試卷內之「選擇題作答區」依序作答。

1. Which of the following countries are members of the Euro area?
 - a. Cyprus
 - b. Estonia
 - c. Slovakia
 - d. Slovenia

2. Which of the following companies were bailed out by the US government during the recent financial crisis?
 - a. Bear Stearns
 - b. Lehman Brothers
 - c. Freddie Mac
 - d. Goldman Sachs

3. According to the Solow growth model, when the growth rate of technology increases, which of the following will happen?
 - a. Steady state output per efficient worker will increase
 - b. Steady state growth rate of capital per worker will increase
 - c. Steady state growth rate of efficient worker will increase
 - d. Saving rate will decrease

4. If your consumption behavior is a random walk process, which of the following statements will be true?
 - a. If your original consumption is \$1000 per month, when you win a lottery of \$5000 in period t , your period t consumption will be \$6000
 - b. Your consumption in period t will not change
 - c. Your consumption will be constant from period t on
 - d. Your consumption in period $t+4$ is expected to be the same as your consumption in period $t+3$

5. Which of the following would happen if Taiwanese citizens buy more US dollar assets?
 - a. Taiwan foreign exchange reserve will increase
 - b. Taiwanese dollar will appreciate
 - c. Interest rates of US dollar assets will become higher
 - d. Taiwan's net foreign asset will increase

見背面

6. Which of the following might be reasons why Ricardian Equivalence might not hold?
- Consumers discount the future
 - Some consumers face borrowing constraints
 - Some consumers do not intend to leave bequests
 - Interest rate increases when government spending increases
7. Suppose the recent financial crisis makes consumers to worry about the soundness of banks. Which of the following statements will be true?
- Without government intervention, interest rate will tend to rise
 - Without government intervention, output will tend to decrease
 - Monetary targeting will be better at stabilizing output in this case
 - Interest rate targeting will be better at stabilizing output in this case
8. What might happen if China liberalizes its financial account?
- The Chinese Yuan might appreciate
 - The Chinese Yuan might depreciate
 - The Chinese trade balance might improve
 - The Chinese trade balance might worsen
9. Suppose the Taiwanese dollar – US dollar exchange rate was 33 NT/\$ on January 2010 while it is 30 NT/\$ on January 2011. Suppose the inflation during this period is 2% in Taiwan, while it is 3% in the US. According to relative PPP, which of the following is true?
- Taiwanese dollar is undervalued
 - Taiwanese dollar is overvalued
 - US dollar is undervalued
 - US dollar is overvalued
10. Suppose there is a small open economy with the following functions:
- Money demand: $(M/P) = Y - 50r$
 Investment: $I = 400 - 10r$
 Consumption: $C = 400 + 0.8(Y - T) - 10r$
 Net export: $NX = 80 - 2E$, where E is real exchange rate
- Suppose further that government spending $G = 100$, taxes $T = 100$, money supply $M = 2200$, price level $P = 2$ and world interest rate $r = 10\%$.
- Suppose the world interest rate increases from 10% to 20%, which of the following will be true?

- a. Output will increase by 100
- b. Output will increase by 500
- c. Real exchange rate will decrease by 150
- d. Real exchange rate will decrease by 200

(二) 簡答題 [2 題，共 20 分]

1. In recent months, a lot of foreign capital flows into Taiwan, which causes an appreciation of the Taiwanese currency. Using the graph of an IS-LM-BP model, explain what might happen to output and interest rate under the following circumstances:

Note: Please label your graphs carefully and explain in words what happen in the graph (like which graph shifts first and why). No points will be given without explanation in words.

- (a) [5 分] The central bank of Taiwan does not intervene in the foreign exchange market
 - (b) [5 分] The central bank of Taiwan intervene in the foreign exchange market to offset some of the appreciation of the Taiwanese currency
2. [10 分] Discuss the weaknesses of New Keynesian models and the weakness of Real Business Cycle models. For each type of models, discuss at least two of its major weaknesses and why those weaknesses are important.

(三) 分析及計算題 [8 題，共 50 分]

考慮一個由眾多同質消費者所組成的兩期稟賦經濟，時間 $t = 1, 2$ 。各期的商品稟賦 y_t 為外生給定，而且不能累積或儲存。令 b_{t-1} 表示消費者於 t 期期初所持有的實質債券餘額，假設 $b_0 = b_2 = 0$ 。代表性消費者的兩期選擇模型給定如下：

$$\begin{aligned} \max_{\{c_1, c_2, b_1\}} & u(c_1) + \beta u(c_2), \quad \beta = 1/(1+\rho), \quad \rho > 0 \\ \text{subject to} & c_1 + b_1 = y_1, \\ & c_2 = y_2 + (1+r)b_1. \end{aligned}$$

上述問題中， c_t 為 t 期消費， ρ 為時間偏好率， r 為實質利率，效用函數 $u(\cdot)$ 滿足 $u'(\cdot) > 0$ ， $u''(\cdot) < 0$ 。

1. [5 分] 請以直觀或數學方式推導消費者選擇問題的最適一階條件，並繪圖表示之。[提示：只寫下數式而未說明者不計分]
2. [7 分] 令 $p = 1+r$ ， $u(c) = -\gamma e^{-c/\gamma}$ ， $\gamma > 0$ 。請證明下式成立：

$$\frac{dc_1}{dp} = \frac{y_1 - c_1}{1+p} - \frac{\gamma}{p(1+p)}.$$

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3. [8分] 請以直觀解釋上式的經濟意義。價格 p 變動對 c_1 的影響為什麼與參數 γ 有關，其直觀意義何在？[提示：你的得分取決於說明的清楚程度]
4. [5分] 在一個自給自足或封閉的稟賦經濟中，均衡債券餘額必為零。假設商品稟賦以比率 $g > 0$ 成長，即 $y_2 = (1+g)y_1$ 。令效用函數的形式為

$$u(c) = \frac{c^{1-\sigma} - 1}{1-\sigma}, \sigma > 0, \sigma \neq 1;$$

若 $\sigma = 1$ ，則 $u(c) = \ln c$ 。請求解自給自足情況下的均衡實質利率。假設 $\sigma = 2$ ， $g = 5\%$ ， $\rho = 3\%$ 。請問均衡實質利率約為多少？

5. [5分] 承上題。請以直觀分別解釋均衡實質利率與 g, ρ 及 σ 的關係。[提示：只寫下影響方向而未說明者不計分]
6. [8分] 假設以上的經濟體系可以進行國際貿易，並在世界資本市場中自由借貸。令 r^* 表示國際借貸利率。對一個小型開放經濟而言， r^* 為外生給定。效用函數及參數值與第4小題同。假設 $r^* = 15\%$ 。請問開放國際貿易對消費、儲蓄及第一期的經常帳餘額有何影響？消費者的福利上升還是下降？請繪圖並以直觀解釋之。[提示：在本模型中，經常帳餘額即為淨出口。你的得分取決於說明的清楚程度]
7. [4分] 假設 $r^* = 10\%$ 。請重新回答上題。
8. [8分] 考慮將本題的稟賦經濟延伸成為生產經濟。令 k_{t-1} 表示消費者於 t 期期初所擁有的資本存量，各期的生產函數為 $y_t = A_t f(k_{t-1})$ ， A_t 為外生衝擊，生產函數滿足古典性質。在兩期的世界中，第二期的資本量 k_2 必為零。假設資本折舊率等於一，消費者的兩期選擇模型給定如下：

$$\begin{aligned} \max_{\{c_1, c_2, b_1, k_1\}} & u(c_1) + \beta u(c_2) \\ \text{subject to} & c_1 + b_1 + k_1 = A_1 f(k_0), \\ & c_2 = A_2 f(k_1) + (1+r)b_1. \end{aligned}$$

上述問題中，期初資本 $k_0 > 0$ 為外生給定。假設效用函數為 $u(c) = \ln c$ ，生產函數為 $y = Ak^\alpha$ ， $0 < \alpha < 1$ 。在一個自給自足的生產經濟中，均衡債券餘額仍然必須等於零。請計算均衡情況下的 c_1, c_2, k_1 及 r 。請根據你的計算結果分別討論 A_1 上升及 A_2 上升對全面均衡的影響。