

國立清華大學 105 學年度碩士班考試入學試題

系所班組別：經濟學系 (0539)

考試科目 (代碼)：總體經濟學 (3902)

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*請在【答案卷、卡】作答

PART I

一、名詞解釋 (15 分，每題 3 分)

1. 時間不一致 (time inconsistency)
2. 費雪效果 (Fisher effect)
3. 替代率 (replacement ratio)
4. 通貨膨脹稅 (inflation tax)
5. 李嘉圖等價 (Ricardian equivalence).

二、單選題 (21 分，每題 3 分)

1. 若台灣的通貨膨脹率為 2%，美國的通膨脹率為 5%，依據購買力平價 (purchasing power parity)，台幣對美元匯率 (number of NT dollars per US dollar) 應
 - A. 上升 3%.
 - B. 下降 3%.
 - C. 上升 8%.
 - D. 下降 8%.
2. 假設現在名目利率為零，經濟進入流動性陷阱 (liquidity trap)，而且有產出缺口 (output gap)。若政府支出增加，依新凱因斯學派理論，下列何者在短期內最可能發生？
 - A. 通貨膨脹上升，產出缺口變小。
 - B. 通貨膨脹下降，產出缺口變大。
 - C. 通貨膨脹上升，產出缺口變大。
 - D. 通貨膨脹下降，產出缺口變小。
3. 假設在某一年中，貨幣供給增加率=3%，貨幣流通速度不變，而實質所得成長率=2%，依數量方程式 (quantity equation)，通貨膨脹率應為
 - A. 6%
 - B. 5%.
 - C. 1.5%.
 - D. 1%.

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4. 假設央行增加貨幣供給，下列何者敘述與流動性效果 (liquidity effect) 一致？
 - A. 名目利率上升.
 - B. 名目利率下降.
 - C. 實質利率上升.
 - D. 實質利率下降.
5. 假設某國的 $GDP=1850$ ，消費=975，政府支出=225，投資=500，淨出口=150，請問國民儲蓄 (national savings) 為何？
 - A. 0.
 - B. 500.
 - C. 650.
 - D. 975.
6. 下列那個經濟變數，在台灣的景氣循環中，波動的幅度最大？
 - A. 消費
 - B. 投資
 - C. 出口
 - D. 政府支出
7. 下列那個數字最接近台灣 2014 年的平均勞動參與率？
 - A. 60%
 - B. 70%
 - C. 80%
 - D. 90%

三、簡答題 (14 分，每題 7 分)

1. 何謂菲利浦曲線 (Phillips curve)？央行的貨幣政策目標應為何？若現在國際油價上漲，央行應如何因應？
2. 何謂傅利曼法則 (Friedman rule)？其背後的經濟意涵為何？

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PART II

Section A: Short questions [30 points]

1. Give one reason why higher taxes might increase the supply of labour and one reason why higher taxes might reduce the supply of labour
2. Give an argument for why doubling the amount of capital and labour should double output even with no increase in the stock of ideas (technologies), but doubling labour, capital, and ideas should more than double output.
3. Suppose nominal prices are sticky. To achieve economic efficiency, explain why the central bank would need to vary the nominal interest rate in response to shocks.
4. Explain why real business cycle theory typically assumes that shocks to total factor productivity are transitory rather than permanent.
5. There is a debate on whether a current tax cut can increase consumption. Explain how this debate is related to the Ricardian Equivalence proposition.
6. Use Fisher equation and the Keynesian model to study the effects of expectations of future deflation.

Section B

Question 1: Intertemporal Consumption [10 points]

Consider the two-period model of consumption where utility function of the consumer is $U(C_1, C_2) = \log C_1 + \beta \log C_2$, where $0 < \beta < 1$.

- (a) [3 points] Suppose the consumer can work only in the first period. Derive the level of saving as a function of r and Y_1 , where r is the real interest rate and Y_1 is the level of income in the first period. Show that the consumer will always be a lender.
- (b) [3 points] Suppose the consumer can work in both period, receiving incomes Y_1 and Y_2 . Derive the level of saving as a function of r , Y_1 and Y_2 . Show that the consumer might be either a borrower or a lender. Explain intuitively why your answer is different from part (a).
- (c) [4 points] During the financial crisis of 2008/9, some economists argued that the recession is related to an increase in the interest rate spread (the difference between the interest rates for lenders and borrowers). Explain their argument in two steps. First. Use a simple model with asymmetric information to explain how the financial crisis can lead to an increase in the interest rate spread. Then explain how this increase can lead to a fall in aggregate consumption in the economy.

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Question 2: Solow Model [10 points]

Consider an economy with the production function $Y = K^{1/2}N^{1/2}$, where Y is output, K is the capital stock, and N is the number of workers. Saving S (equal to investment I) is equal to a fraction s of income. Capital depreciates at rate d , so the capital accumulation equation is $K' = (1 - d)K + I$. The number of workers is assumed to be constant over time ($n=0$), so $N' = N$.

- (a) [2 points] Let $k = K/N$ and $y = Y/N$ denote capital and output per worker respectively. Derive the per-worker production function $y = f(k)$ and the relationship between the growth rate $(k' - k)/k$ of capital per worker and the level k of capital per worker. Use a diagram to show that the economy has a steady state for capital per worker to which it will eventually converge.
- (b) [3 points] Assuming the economy begins at its steady state, find the effects on output per worker of an increase in the saving rate. Sketch graphs of output per worker and the growth rate of output per worker over time and explain the intuition behind your findings.

Now suppose the economy's production function is $Y = K^{1/2}N^{1/2} + aK$, where $a > 0$. All other assumptions are unchanged.

- (c) [2 points] Derive the per-worker production function $y = f(k)$ and the relationship between $(k' - k)/k$ and k . Assuming that $s < d/a$, show that the economy has a steady state for capital stock per worker to which it will converge.
- (d) [3 points] Starting from the steady state, suppose the saving rate is increased above d/a . Find the effects on output per worker and sketch graphs of the level and growth rate of output per worker over time. Explain intuitively why your findings are different from those in part (b).