

考試科目	個體經濟理論	所別	財政學系	考試時間	5月12日(六)第一節
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1. (30分) Lerner Index 定義如下: $\frac{p-c}{p}$, 其中 p 為產品價格, c 為生產的邊際成本。在完全壟斷的廠商成

本函數為 $C(q) = c \cdot q$ (其中 q 為生產量) 的情況下:

(1). 證明 $\frac{p-c}{p} = \frac{1}{\eta}$ (η 為需求彈性)

(2). 說明(1)的經濟意義為何。

2. (70分) 假設消費者的效用如右: $u(x_1, x_2) = \min\{x_1 + 2x_2, 2x_1 + x_2\}$

- (1). 請畫出一組該消費者的無差異曲線 (indifference curve)
- (2). 請畫出該消費者的財富擴展路途 (wealth expansion path)
- (3). 請解出第一項商品和第二項商品的需求函數
- (4). 請畫出第一項商品的恩格爾曲線 (Engel Curve)



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1. Consider the following model:

$$(1) Y_t = K_t^b H_t^c N_t^{(1-b-c)}$$

$$(2) S_{K,t} = s_K Y_t$$

$$(3) S_{H,t} = s_H Y_t$$

$$(4) I_{K,t} = K_{t+1} - (1 - d_K)K_t$$

$$(5) I_{H,t} = H_{t+1} - (1 - d_H)H_t,$$

where Y is output, S_i are savings, $i=H, K$, K and H represent physical and human capital, and I_K and I_H represent investment in the two different kinds of capital.

- a) Express the production function as a function relating Y/N to K/N and H/N . (5 points)
- b) Derive formulas for output per capita, Y/N , physical and human capital per worker, K/N and H/N , in steady state. (10 points)

Assume that:

- The elasticity of output with respect to both physical and human capital is $1/4$.
- People consume 75% of their income; also they save in equal measure towards the accumulation of physical and human capital.
- The wear and tear destroys 10% of physical capital every year.
- Also, 5% of human capital is lost every year to depreciation.
- Population grows at a rate of 1.5% per year.

- c) Given the information above, attribute values to the parameters of the model ($b, c, n, s_H, s_K, d_K, d_H$) and find values for the steady state variables using the formulas you derived in (b) (10 points)

- d) Assume that the productive factor (labor, physical and human capital) are remunerated according to their marginal products. Compute the wage rate, the physical and human capital remuneration in steady state. (15 points)

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2. a) What is **Quantitative Easing (QE)**? (5 points)

Suppose the Federal Reserve of The U.S. decides to go ahead with a third round of quantitative easing to stave off a double dip recession.

b) Fully explain the impact of such a change on U.S. economy (US real interest rate, investment in the US, the current and capital accounts in the US, the real and nominal exchange rate measured as Rest of World Currency per US dollar, and etc.). (15 points)

c) Fully explain the impact of such a change on the economy of developing countries, such as Taiwan (consumption, investment, total output, price level, and etc.). (10 points)

3. Answer the following questions (answers are supposed to be brief but meaningful).

a) What is the basic equation on which the quantity theory of money is based? What is it basically saying in terms of monetary policy? (10 points)

b) True or False? The higher the steady-state capital-labor ratio is, the more consumption each worker can enjoy in the long run. Explain your answer. (10 points)

c) Why does basic growth theory fail to explain the problems of the poor nations? (10 points)

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