

國立中央大學九十一年度碩士班研究生入學試題卷

所別： 財務金融學系 甲乙組丙組科目： 經濟分析 共 2 頁 第 1 頁

Answer the following questions. Please make any necessary assumptions for those questions whose information is not sufficient for you to find out the solutions.

1. Suppose there are N firms, and firm i 's cost function can be represented as:

$$C_i(y_i) = \frac{y_i^2}{2i} + 2, \quad i=1, \dots, N.$$

And there are also N consumers in the market, whose utility function and budget constraints are as the following:

$$U_i(y_i, x_i) = \sqrt{y_i x_i}, \quad i=1, \dots, N.$$

$$P_y y_i + P_x x_i = 2i.$$

x_i refers to the consumer's demand on other goods, and consumer i has income $2 \times i$.

Answer the following questions:

- (5%) Calculate the marginal cost, variable cost, and average cost functions for firm i .
 - (10%) Derive the industry supply curve.
 - (10%) Derive the market demand function.
 - (5%) What are the equilibrium price and quantity?
2. Two firms (A and B) are considering bringing out competing brands of a healthy cigarette. Payoffs to the companies are as follows (A's profits are given first).

		Firm B	
		Produce	Don't Produce
Firm A	Produce	3,3	5,4
	Don't Produce	4,5	2,2

- (10%) Does this game have any Nash equilibrium? Please explain.
- (5%) Does this game present any first-mover advantages for either firm A or firm B?
- (5%) Would firm B find it in its interest to bribe firm A to stay out of the market?

參考用

注意：背面有試題

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3. The following three arguments are about the "burden of the national debt."
- Our children and grandchildren will be burdened by heavy interest payments. Higher taxes will be necessary to make these payments.
 - It will ruin the nation when we repay the enormous debt.
 - Like any family or business, a nation has a limited capacity to borrow. If it exceeds this limit, it is in danger of being unable to pay its creditors. It may go bankrupt, with calamitous consequences.
- Point out the errors in each argument. (10%)
 - Under what circumstance will a budget deficit result in "crowding out"? Explain why it may be a serious problem. (5%)
 - Is there a true burden of the portion of the national debt owed to foreigners? (5%)
4. The *Laffer curve* is the relation between the tax rate t and tax revenue T . The *Laffer effect* occurs when the Laffer curve slopes downward, i.e., when an increase in the tax rate causes such a substantial reduction in the amount of labor supplied that tax revenue falls. If the demand for labor is perfectly elastic at wage \bar{w} and the supply of labor $S(w)$ is an upward-sloping function of the after-tax wage rate so that $dS/dw > 0$ and $w = (1-t)\bar{w}$, then the tax revenue received by the government is $T = tS(w)\bar{w}$. Given this tax revenue function, what must be true of the relationship between the elasticity of labor supply $(w/S)(dS/dw)$ and the tax rate t , for the Laffer effect to occur? (15%)

5. The IS-LM model can be described by the goods and money market clearing equations:

$$IS(Y^*, r^*) = I(r^*) - S(Y^*, r^*) + D = 0$$

$$LM(Y^*, r^*) = L(Y^*, r^*) - \frac{M^S}{p} = 0$$

Where I = real investment expenditure, S = real savings, D = real government deficit, L = demand for real money balance, M^S = nominal supply of money, p = price level. The equilibrium level of income combined with the equilibrium rate of interest (Y^*, r^*) simultaneously clears both the goods market and the money market.

Now consider a classical macroeconomic model in which the level of income is fixed at the full employment level Y_f , and the price level p is a variable. Thus for the classical model, the solutions are:

$$p^* = p^*(D, M^S, Y_f),$$

$$r^* = r^*(D, M^S, Y_f)$$

Find the comparative statics impact of a change in the money supply M^S on this classical model (i.e., find $\partial r^*/\partial M^S$ and $\partial p^*/\partial M^S$). Interpret your results. (15%)