

※ 注意：請於試卷上「非選擇題作答區」依序作答，並應註明作答之題號。

Part I (50%): 簡答計算題

- (10%) 簡要解釋下列名詞：(1) 效率市場假說 (2) 量化寬鬆 (QE)。
- (5%) 假設某國今年的貨幣供給為 500 billion，名目和實質 GDP 分別為 10000 billion 以及 5000 billion。請問該國的價格水準(2%)與貨幣流通速度(3%)為何？
- (15%) 某封閉經濟體內生產毛額(GDP)為 5000，消費函數為 $C = 1,000 + 0.3(Y - T)$ ，投資函數為 $I = 1,500 - 50r$ ，其中 r 為實質利率。稅額 T 為 1,000，政府支出 G 為 1,500。依照凱因斯的理論，請算出均衡狀態下的消費 C 、投資 I 、利率 r 、國家總儲蓄(national saving)以及私人儲蓄(private saving)。
- (10%) 某國的人口(或勞動投入)的成長率平均為 1.6%。假設生產函數為 Cobb-Douglass, $Y = AK^\beta L^{1-\beta}$ ， $\beta = 0.4$ ， K 、 L 、 A 分別為資本、勞動、以及技術的投入， Y 則為經濟體系的總產出。令 $\Delta y/y$ 代表 GDP 的成長率(其他變數也使用相同符號)。如果該國技術成長率是總產出成長率的 1/4，單位面積之人口數 L/K 的成長率為 0.3%。請問：
 - 該國 GDP 成長率為何？
 - 該國勞動力成長率為何？
- (10%) 考慮一個勞動投入固定，生產函數 $Y = AF(L, K) = AK^\beta L^{1-\beta}$ (固定規模不變)的 Solow model 設定。令 s 為儲蓄率， δ 為折舊，皆為外生給定。當經濟體系到達恆定狀態 (steady state) 時：
 - 請導出恆定狀態的均衡 K^* 與 Y^* 。
 - 若生產函數並非 Cobb-Douglass，而是 $Y = \theta K$ ， θ 是一個常數。請問恆定狀態的 Y^* 為何？

Part II (28%): True or False:

Determine whether these statements are true or false, and briefly state your reasoning (less than 100 words):

- (4%) True or False. If the demand for lettuce falls, the price will fall, causing the demand to go back up.
- (4%) True or False. The discovery of a new method of birth control that is safer, cheaper, more effective, and easier to use than any other method would reduce the number of unwanted pregnancies.
- (4%) True or False. Apple computers contain hard drives made by other manufacturers. If Apple made its own hard drives, Apple computers would be cheaper.
- (4%) True or False. If department stores were made liable to their customers for the effects of assaults that occurred on site, the number of such assaults might go up.
- (4%) True or False. If a new law states that married men have the duty to do at least half the housework (or, wives have the right to make such a request), then a lot of men will have to do more housework than they do today.
- (4%) True or False. Monopolists can achieve any level of profit they desire because they have unlimited market power.
- (4%) True or False. When all firms in an industry charge the same price, this is evidence of collusion.

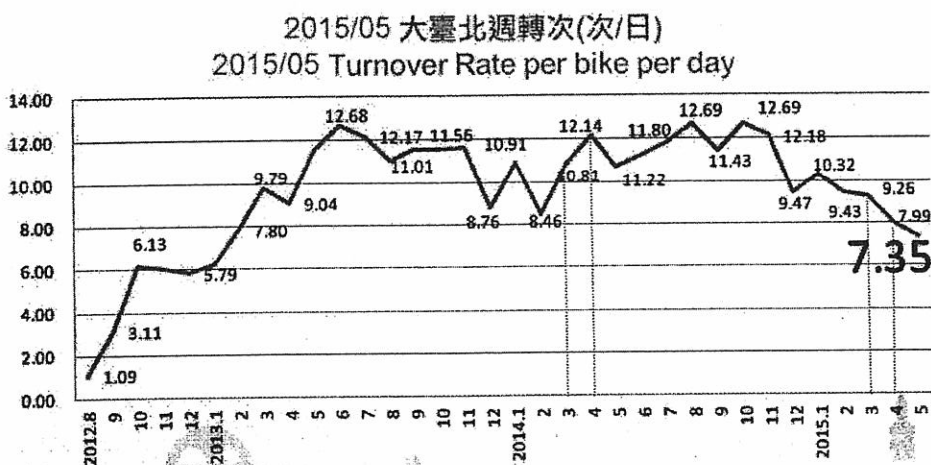
見背面

Part III (22%): The Demand for Youbikes in Taipei City

Article 1: Excerpts of “With End of Free YouBike Rides, Taipei Sees Better-than-Expected Results” from Total Taipei.com, April 1, 2015

The free half hour of use for the YouBikes came to an end in Taipei today. The first half hour is now NT\$5. It was previously free for 30 minutes and then NT\$10 for the second half hour. The city changed the pricing scheme because most YouBike users only rode the bikes for less than 30 minutes, which cost the city millions in annual revenue. ... (omitted) ... On the first day of the new pricing scheme, the city saw better-than-expected results. From 6:00 to 12:00, the number of rides on the YouBikes totaled 17,338, compared with 21,553 for the same time period yesterday. The city expected usage to fall to 70% of previous usage numbers...

Article 2: “2015/05 Turnover Rate per bike per day” from www.youbike.com.tw, June 2, 2015



Answer the following questions:

- (5%) Estimate the elasticity of demand for YouBike rides using the midpoint method based solely on the numbers reported in Article 1. Is the demand elastic or inelastic? What assumptions do you need to make to reach this conclusion?
- (5%) Now estimate the elasticity of demand for YouBike rides using the midpoint method based solely on the monthly information of March and April 2015 reported in Article 2. Is the demand elastic or inelastic? What assumptions do you need to make to reach this conclusion?
- (9%) What is the change in average turnover rate between March and April 2014? What would the April 2015 average turnover rate be assuming there is a fixed yearly cycle in demand so the same change would have occurred between March and April 2015 had there been no price change? What is the elasticity of demand for YouBike rides based on these numbers? Is the demand elastic or inelastic? What would have happened if YouBike charged NT\$10 instead of NT\$5 for the first half hour?
- (3%) Compare your estimates for the above three questions. What does this tell you about the assumptions made? What is your policy recommendation to the Taipei City government?