

國立東華大學財務金融系 104 學年度第 1 學期 財務管理 期中考

- ✧ 計算題務必寫出過程、使用千分位符號(,)以及小數點標示清楚
- ✧ 若題目沒有特別說明，請計算至小數點以下第 2 位，第 3 位四捨五入。表示方式如 1,234.56，78.09%。
- ✧ 滿分 120 分

1. (15分) Orange公司現在購買轎車一部，總價1,500,000元，除支付頭期款225,000元，其餘金額辦理定額分期付款，第一筆錢於一年後開始支付，分5年本利平均償還(每年付款一次)，利率為8%，試問每年須付多少？並作分期付款攤銷表。(注意：四捨五入至整數位，表頭範例如下)

期數	期初餘額	每期償還	利息部份	本金部份	期末餘額
----	------	------	------	------	------

2. (20分) 代理問題

- (1). (2 分) 誰是公司的所有權人？
- (2). (2 分) What does the phrase *limited liability* mean in a corporate context?
- (3). (3 分) 為什麼公司(股份有限公司)會有代理問題？
- (4). (6 分) 請問何謂過度投資？何謂投資不足？
- (5). (3 分) 請說明公司治理中 free rider 的現象。
- (6). (4 分) 請說明控制股東質押股票所產生的問題。

3. (10分) In December 2011, high-end retailer Nordstrom (JWN) had an operating margin of 11.5% over the past year; Wal-Mart Stores (WMT) had an operating margin of only 5.9%.

- (1). (4 分) 請說明 operating margin 的定義和用途。
- (2). (6 分) 如果你是證券分析師，根據上述資訊，你認為 Wal-Mart Stores (WMT) 的 operating margin 較其同業公司低的原因為何？

4. (6分) 財務槓桿

- (1). (3 分) 請問公司的財務槓桿 (leverage) 的用途為何？
- (2). (3 分) 統一的應付帳款很高，這被認為是好的負債，請解釋可能原因。

5. (10分) 請使用杜邦恆等式 (DuPont Identity) 的方法去拆解ROE (股東權益報酬率)，並說明如何提高公司的ROE。

6. (14分) Suppose you started a Web site hosting business and then decided to return to school. Now that you are back in school, you are considering selling the business within the next year. An investor has offered to buy the business for \$200,000 whenever you are ready. If the interest rate is 10%, which of the following three alternatives is the best choices? If you need \$60,000 in cash now to pay for school and other expenses, would selling the business be a better choice in that case?
- (1). Sell the business now.
 - (2). Scale back the business and continue running it while you are in school for one more year, and then sell the business (requiring you to spend \$30,000 on expenses now, but generating \$50,000 in profit at the end of the year).
 - (3). Hire someone to manage the business while you are in school for one more year, and then sell the business (requiring you to spend \$50,000 on expenses now, but generating \$100,000 in profit at the end of the year).
7. (15分) Use the table for the question(s). Suppose that over the next year the economy is equally likely to strengthen or weaken. Security A will pay investors \$840 if the economy is strong and nothing if it is weak. Security B will pay investors \$840 if the economy is weak and nothing if it is strong. Today, the market price of security A is \$350 and security B is \$450.

Security	Market Price	Cash Flow in One Year	
	Today	Weak Economy	Strong Economy
A	350	0	840
B	450	840	0
C	???	840	4200

- (1). (2 分) What is the risk-free rate?
- (2). (2 分) What is the expected return of security A? What is its risk premium?
- (3). (2 分) What is the expected return of security B? What is its risk premium?
- (4). (3 分) Why does the expected return of a risky security generally differ from the risk-free interest rate? What determines the size of its risk premium?
- (5). (6 分) Suppose that security C will pay investors \$840 if the economy is weak and \$4200 if it is strong. And security C has a risk premium of 30%. What is the no-arbitrage price of security C? What arbitrage opportunity would be available?

8. (10分) Consider two securities that pay risk-free cash flows over the next two years and that have the current market prices shown here:

Security	Price Today (\$)	Cash Flow in One Year (\$)	Cash Flow in Two Years (\$)
B1	94	100	0
B2	85	0	100

- (1). (4 分) What is the no-arbitrage price of a security that pays cash flows of \$100 in one year and \$100 in two years? What is the risk-free rate?
 - (2). (3 分) What is the no-arbitrage price of a security that pays cash flows of \$100 in one year and \$500 in two years?
 - (3). (3 分) Suppose a security with cash flows of \$50 in one year and \$100 in two years is trading for a price of \$130. What arbitrage opportunity is available?
9. (9分) Your grandfather put some money in an account for you on the day you were born. You are now 18 years old and are allowed to withdraw the money for the first time. The account currently has \$3996 in it and pays an 8% interest rate.
- (1). (3 分) How much money would be in the account if you left the money there until your 25th birthday?
 - (2). (3 分) What if you left the money until your 65th birthday?
 - (3). (3 分) How much money did your grandfather originally put in the account?
10. (6分) You have a loan outstanding. It requires making three annual payments at the end of the next three years of \$1000 each. Your bank has offered to allow you to skip making the next two payments in lieu of making one large payment at the end of the loan's term in three years. If the interest rate on the loan is 5%, what final payment will the bank require you to make so that it is indifferent between the two forms of payment?
11. (5分) You are saving for retirement. To live comfortably, you decide you will need to save \$2 million by the time you are 65. Today is your 30th birthday, and you decide, starting today and continuing on every birthday up to and including your 65th birthday, that you will put the same amount into a savings account. If the interest rate is 5%, how much must you set aside each year to make sure that you will have \$2 million in the account on your 65th birthday?