

國立東華大學財務金融系 105 第 1 學期 財務管理 第二次小考

- ✧ 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. (16分) 假如今天是2017年1月1日，你打算在今天將\$10,000存入利率為12%的銀行帳戶，如果銀行 (1)每年複利一次，(2)每半年複利一次，(3)每季複利一次，(2)每月複利一次。根據以上四種情況，請算出你在2020年1月1日銀行帳戶中的本利和。並算出以上四種情況的有效年利率(EAR)。
 2. (10分) You would like to create a three-year synthetic zero-coupon bond. Assume you are aware of the following information: One-year zero-coupon bonds are trading \$0.95 per dollar of face value, two-year zero-coupon bonds are trading \$0.90 per dollar of face value, three-year zero-coupon bonds are trading \$0.87 per dollar of face value and three-year 10% coupon bonds (annual payments) are selling at \$1,200.26 (face=\$1,000)
 - (1). (2 分) What are the four cash flows from the three-year coupon bond?
 - (2). Assume you can purchase a three-year 10% coupon bond and unbundle the four cash flows and sell them all.
 - A. (4 分) How much will you receive from the sale of the four Treasury strips?
 - B. (4 分) In this case, unbundle the three-year 10% coupon bond is a good idea? Why?
 3. (9分) Anle Corporation has a current price of \$20, is expected to pay a dividend of \$1 in one year, and its expected price right after paying that dividend is \$22.
 - (1). (3 分) What is Anle's expected dividend yield?
 - (2). (3 分) What is Anle's expected capital gain rate?
 - (3). (3 分) What is Anle's equity cost of capital?

4. (6分) Suppose a 10-year, \$1000 bond with an 8% coupon rate and semiannual coupons is trading for a price of \$1034.74.
 - (1). (3 分) What is the bond's yield to maturity (expressed as an APR with semiannual compounding)?
 - (2). (3 分) If the bond's yield to maturity changes to 10% APR, what will the bond's price be?
5. (8分) Cooperton Mining just announced it will cut its dividend from \$4 to \$2.50 per share and use the extra funds to expand. Prior to the announcement, Cooperton's dividends were expected to grow at a 3% rate, and its share price was \$50. With the new expansion, Cooperton's dividends are expected to grow at a 5% rate. What share price would you expect after the announcement? (Assume Cooperton's risk is unchanged by the new expansion.) Is the expansion a positive NPV investment?
6. (10分) Halliford Corporation expects to have earnings this coming year of \$3 per share. Halliford plans to retain all of its earnings for the next two years. For the subsequent two years, the firm will retain 50% of its earnings. It will then retain 20% of its earnings from that point onward. Each year, retained earnings will be invested in new projects with an expected return of 25% per year. Any earnings that are not retained will be paid out as dividends. Assume Halliford's share count remains constant and all earnings growth comes from the investment of retained earnings. If Halliford's equity cost of capital is 10%, what price would you estimate for Halliford stock?
7. (9分) Suppose the current zero-coupon yield curve for risk-free bonds is as follows:

Maturity (years)	1	2	3	4	5
YTM	5.00%	5.50%	5.75%	5.95%	6.05%

- (1). (3 分) What is the price per \$100 face value of a two-year, zero-coupon, risk-free bond?
- (2). (3 分) What is the price per \$100 face value of a four-year, zero-coupon, risk-free bond?
- (3). (3 分) What is the risk-free interest rate for a five-year maturity?

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8. (8分) Assume there are four default-free bonds with the following prices and future cash flows:

Bond	Price Today	Cash Flows		
		Year 1	Year 2	Year 3
A	\$934.58	1000	0	0
B	881.66	0	1000	0
C	1,118.21	100	100	1100
D	839.62	0	0	1000

Do these bonds present an arbitrage opportunity? If so, how would you take advantage of this opportunity? If not, why not?

9. (24分) 下列兩個表分別是某公司之個別同業公司、上市大盤、及整體同業的平均股價、EPS、本益比、每股淨值及股價淨值比的資料。若該公司2011年第四季至2012年第三季的稅後淨利(純益)為6,217,513千元，該公司股東權益為27,318,720仟元，流通在外股數為1,721,362千股。
- (1). (5 分) 請問此公司 2011 年第四季至 2012 年第三季的 EPS 為多少元？
- (2). (15 分) 你認為這家公司的股價應在哪個區間之內為合理？為什麼？
- (3). (4 分) 請找出一家公司和其同業公司，並說明為什麼兩家是同業的原因。

單位：新台幣元；倍

項目	2012.08~2012.10 平均股價(註1)	2011 年第四季~ 2012 年第三季 每 股稅後盈餘(註2)	本益比
遠雄(5522)	53.04	7.15	7.42
宏盛(2534)	16.05	1.97	8.15
太子(2511)	20.74	1.44	14.40
上市大盤	—	—	24.06
上市建材營造類	—	—	10.41

項目	2012.08~2012.10 平均股價(註1)	2012年9月30日 每股淨值(註2)	股價淨值比
遠雄(5522)	53.04	41.64	1.27
宏盛(2534)	16.05	17.98	0.89
太子(2511)	20.74	13.47	1.54
上市大盤	—	—	1.62
上市建材營造類	—	—	1.16

註1：係擷取自證券交易所網站資料

註2：係擷取自各公司各期間經會計師查核簽證或核閱之財務報告

10. (20分) Web Cites Research projects a rate of return of 15 percent on new projects. Management plans to plow back 30 percent of all earnings into the firm. Earnings this year will be \$2 per share, and investors expect a 10 percent rate of return on the stock.
- (1). (4分) What are the growth rate, stock price, P/E ratio and the present value of growth opportunities?
 - (2). (2分) What would the price and P/E ratio be if the firm paid out all earnings as dividends?
 - (3). (2分) What do you conclude about the relationship between growth opportunities and P/E ratios?
 - (4). (2分) Now suppose that Web Cites Research projects a rate of return of 10% on new projects, earnings this year will be \$2 per share, and investors expect a 10 percent rate of return on the stock. Find the price and P/E ratio in these circumstances. Assume a 70% payout ratio.
 - (5). (3分) Please compare (2) and (4). Explain it.
 - (6). (3分) Now suppose that instead of plowing money back into investment projects, Web Cites Research's management is investing at an expected return on equity of 8 percent. Find the growth rate of dividends and earnings, the price and P/E ratio in these circumstances. Assume a 70% payout ratio.
 - (7). (4分) Find the new value of its investment opportunities. Explain why this value is negative despite the positive growth rate of earnings and dividends. If you were a corporate raider, would Web Cites Research be a good candidate for an attempted takeover? Why ?