

國立中央大學 110 學年度碩士班考試入學試題

所別： 財務金融學系 碩士班 甲組(一般生)

共5頁 第1頁

科目： 財務管理

本科考試禁用計算器

\*請在答案卷(卡)內作答

**I. Multiple Choice: Please choose the BEST answer. (45%)**

1. Which of the following statements is incorrect?
  - A) If the market portfolio is not efficient, then a stock's beta with the market is not an adequate measure of its systematic risk.
  - B) The true market portfolio stocks, bonds, real estate, art, and precious metals.
  - C) Nonzero alphas may indicate that the wrong market proxy is being used.
  - D) The information required to implement a momentum strategy is not readily available to investors.
2. Which of the following statements is incorrect?
  - A) If the CAPM correctly computes the risk premium, investors would stop investing only when they expected the alpha of an investment strategy to be negative.
  - B) Although the true market portfolio of all invested wealth might be efficient, the proxy portfolio might not track the actual market very well.
  - C) An efficient portfolio cannot be diversified further, that is there is no way to reduce the risk of the portfolio without lowering its expected return.
  - D) To determine a project's cost of capital we need to estimate its beta.
3. Which of the following statements is incorrect?
  - A) When agency costs are significant, short-term debt may be the most attractive form of external financing.
  - B) Too much debt can motivate managers and equity holders to take excessive risks or over-invest in a firm.
  - C) Too much debt can motivate managers and equity holders to under-invest in a firm.
  - D) Firms with high R&D costs and future growth opportunities typically maintain high debt levels.
4. Which of the following statements is incorrect?
  - A) When securities are fairly priced, the original shareholders of a firm pay the future value of the costs associated with bankruptcy and financial distress.
  - B) The Modigliani and Miller theorem does not hold in a perfect capital market with the risk of bankruptcy.
  - C) With tangible assets, the financial distress costs of leverage are likely to be low.
  - D) Although direct costs of bankruptcy are difficult to measure accurately, they are typically much smaller than the indirect costs of bankruptcy.
5. Which of the following statements is incorrect?
  - A) Proponents of the management entrenchment theory of capital structure believe that managers choose a capital structure to avoid the discipline of debt and maintain their own job security.
  - B) The pecking order hypothesis states that managers will have a preference to fund investment using retained earnings, or debt, rather than equity.
  - C) According to the empire building hypothesis, leverage increases firm value.
  - D) The presence of financial distress costs can explain why firms choose debt levels that are too high to fully exploit the interest tax shield.

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6. You have been instructed to place an order for a client to purchase 500 shares of every IPO that comes to market. The next two IPOs are each priced at \$26 a share and will begin trading on the same day. The client is allocated 500 shares of IPO A and 240 shares of IPO B. At the end of the first day of trading, IPO A was selling for \$23.90 a share and IPO B was selling for \$29.40 a share. What is the client's total profit or loss on these two IPOs as of the end of the first day of trading?
- A) - \$286      B) - \$234      C) - \$148      D) \$275
7. Which one of the following statements is correct concerning the direct costs of issuing securities?
- A) The gross spread as a percentage of proceeds is the same for similar-sized IPOs and SEOs.  
B) A seasoned offering is always more expensive on a percentage basis than an IPO.  
C) There tends to be substantial economies of scale when issuing any type of security.  
D) The costs of issuing convertible bonds tend to be less on a percentage basis than the costs of issuing straight debt.
8. Mobile Units recently offered 75,000 new shares of stock for sale. The underwriters sold a total of 78,500 shares to the public at a price of \$16 a share. The additional 3,500 shares were purchased in accordance with which one of the following?
- A) Green Shoe provision  
B) Red herring provision  
C) Quiet provision  
D) Lockup agreement
9. Which one of the following statements is correct?
- A) A general partnership is legally the same as a corporation.  
B) Income from both sole proprietorships and partnerships that is taxable is treated as individual income.  
C) Partnerships are the most complicated type of business to form.  
D) Only firms organized as sole proprietorships have limited lives.
10. Which one of the following is *least* apt to help convince managers to work in the best interest of the stockholders? Assume there are no golden parachutes.
- A) Stock option plans  
B) Threat of a company takeover  
C) Threat of a proxy fight  
D) Increasing managers' base salaries
11. In U.S., the information content of a dividend increase generally signals that:
- A) management believes the future earnings of the firm will be strong.  
B) the firm has several net present value projects to pursue.  
C) future dividends will be lower.  
D) the firm has a one-time surplus of cash.

**注意：背面有試題**

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12. Which one of these statements is true?

- A) The cumulative finance surplus requirement is computed prior to adjusting for the minimum cash balance.
- B) A negative cumulative cash surplus indicates a borrowing need.
- C) The minimum cash balance generally increases on a quarterly basis.
- D) Most firms plan on maintaining a zero cash balance.

13. Credit scoring models are used by lenders to determine:

- A) the best discount to offer each customer.
- B) the appropriate price to charge each customer.
- C) the percentage of their loan that will be repaid in a bankruptcy.
- D) a borrower's credit risk.

14. Curtiss' Cowboy Hat Company recently completed a merger. When valuing the combined firm after the merger, which of the following is an example of the type of common mistakes that can occur?

- A) The use of market values in valuing the newly combined firm
- B) The inclusion of cash flows that are incremental to the decision
- C) The use of Curtiss' discount rate when valuing the cash flows of the entire company
- D) The inclusion of all relevant transaction costs associated with the acquisition

15. Which one of these statements is correct?

- A) Borrowing money in the country in which operations are located reduces long-run exchange rate risk.
- B) In multidivisional firms, exchange rate risk should be managed at the division level.
- C) Unexpected changes in economic conditions are classified as short-run exposure to exchange rate risk.
- D) The usage of forward rates can help reduce the long-run exposure to exchange rate risk.

## II. Comprehensive Questions

16. Figure 1 plots changes in prices (in the vertical axis) in respond to changes in the yield to maturity (the horizontal axis) for four coupon bonds with the following properties:

- i. maturity in 5 years, coupon rate 3%, and yield to maturity 15%;
- ii. maturity in 15 years, coupon rate 3%, and yield to maturity 15%;
- iii. maturity in 15 years, coupon rate 3%, and yield to maturity 9%;
- iv. maturity in 5 years, coupon rate 18%, and yield to maturity 15%.

Please identify which properties are with Bonds A, B, C, and D in the graph. Note that scores are given only if you offer reasons alongside with the correct answer. (10 points)

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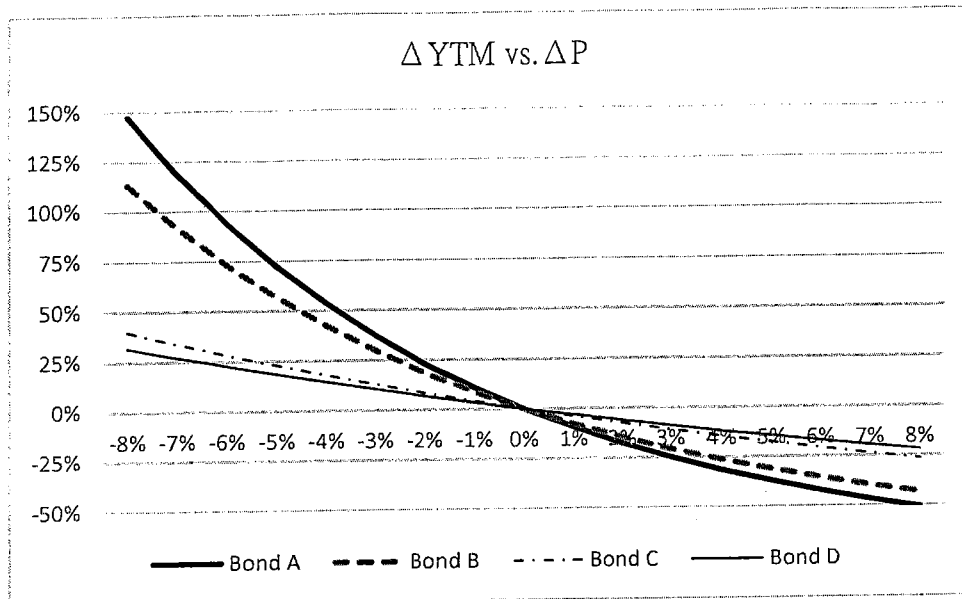


Figure 1

17. You are going to launch a new business which is estimated to generate pre-tax cash flow of \$15,000 in the first year with a growth rate of 3% per annum. The corporate tax rate is 20%.
- i) To estimate the cost of capital, you survey the capital market and find that the average beta is 2 for all-equity firm in the similar industry as your new business. Under the risk-free rate of 1% and the market-portfolio return of 7%, please compute the cost of capital for your business if you want to finance the project by equity only. (3 points)
  - ii) Following the previous question, if your business will cost \$100,000 to build, please compute its net present value. (3 points)
  - iii) Now suppose you want to issue both debts and equities to finance the business. Specifically, you would like to maintain the debt-to-equity ratio equal to one. If the beta of debt is 0.5, compute the costs of capital of the business for this scenario. (3 points)
  - iv) Following the previous questions, what are the values of debts and equities? (3 points)
  - v) Following the previous questions, what is the value of interest tax shield? (3 points)
18. The following table reports the financial variables for United Microelectronics Corporation and Taiwan Semiconductor Manufacturing Company. These financial variables are extracted from the 2019 financial statements. Please use the information in the table to answer the questions.
- i) Please compute the Tobin's Q for these two companies. (4 points)
  - ii) Please employ the Du-Pont identity to compare the performance of these two companies, and comment on their differences. (6 points)

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(Units: NTD millions)	United Microelec.	TSMC
Total current assets	153,757	822,614
Total non-current assets	216,430	1,442,191
Total assets	370,187	2,264,805
Total current liabilities	72,714	590,736
Total non-current liabilities	90,259	51,974
Total liabilities	162,973	642,710
Total equity	207,214	1,622,095
Total operating revenue	148,202	1,069,985
Total operating costs	126,887	577,287
Total tax expense (income)	(393)	44,502
Comprehensive income	9,538	333,520
Market Value of Common Stocks at Year-end	193,682	8,582,956

19. Recently, many market participants encourage the firm to invest in E, S, and G.

- i) What is ESG? (3 points)
- ii) Provide each example for firm's investment in E and S respectively. (4 points)
- iii) Provide one argument for why investment in ESG could be bad for the firm. (4 points)

20. Under Modigliani-Miller world, one firm has its original balance sheet as the following:

Assets		Liabilities & Equity	
Cash	\$550,000	Debt	0
Other assets	1,450,000	Equity	2,000,000
Value of Firm	2,000,000	Value of Firm	2,000,000

Shares outstanding = 100,000

Price per share =  $\$2,000,000 / 100,000 = \$20$

What's the price per share, and firm value after the following two cases: (1) the firm paid cash dividend of \$500,000 and (2) the stock repurchases of \$500,000? Compare the firm value in both cases. What does your result suggest the choice between cash dividend and stock repurchase in Modigliani-Miller world? (9 points total)