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淡江大學九十四學年度碩士班招生考試試題

系別：財務金融學系　　　　科目：財　務　管　理

准帶項目請打「V」	
V	簡單型計算機

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本試題雙面印製

共 8 題，滿分 100。

1. Suppose every stock in the economy has a standard deviation of 22%, and a covariance with every other stock of 10%. Calculate the standard deviation of a portfolio that divides its money equally among every stock it holds if it holds
   a. 1 stock
   b. 2 stocks
   c. 10 stocks
   d. 1 billion stocks (hint: find the approximate standard deviation). (*10 points*)

2. Miller Steel and Jackson Steel are identical except for capital structure. Miller has 40% debt and Jackson has 30% debt. In a perfect capital market and a world of no taxes, both companies can borrow at a rate of interest of 12%. (*10 points*)
   a. If the overall capitalization rate of the company is 20% and you own 2% of the stock of Miller, what is your dollar return when the company has net operating income of $500,000?
   b. If Jackson Steel has the same $500,000 of net operating income as Miller, and you invested the same amount of money in Jackson and received the same amount of dollar return, what percentage of the total stock of Jackson would you own? What is the equity capitalization rate? Why does it differ from that of Miller?

3. The Aplus Mining Company is planning to enter the oil drilling business and is looking for a proxy company to measure the risk involved in it. Bebetter Oil, whose stock is publicly traded, is suggested as an appropriate benchmark. Bebetter has a debt-equity ratio of 0.3, a beta of 1.25, and an effective tax rate of 34%. Aplus has a debt-equity ratio of 0.5. Its outstanding bonds have a coupon rate of 12 %, and it has a marginal tax rate of 34%. (*10 points*)
   a. If Aplus maintains its 50% debt-equity ratio, what is the beta it should use for evaluating the rate of return on its new project?
   b. If the risk-free rate presently is 8% and the expected return on the market portfolio is 11%, what return should the company required for the project if it uses a CAPM approach?

4. Financial managers will want to invest the portion of excess fund to short-term marketable securities. Describe at least 4 types of available short-term investment instruments. (*10 points*)

5. Ten years ago you started up Taiwan Blue-Green Way (TGBW) which specializes in home furniture. Your stock holdings in this firm constitute nearly 100% of your portfolio. TGBW has a book value of $10 million, and last year produced $3 million in profits. Your cost of capital equals 20%. (*10 points*)

   a. A financial advisor notes that your return on equity is greater than your cost of capital. The advisor

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suggests that you increase the firm's investments until the return on equity equals the cost of capital. Should you do so? Explain why or why not in five sentences or less.

Over the years you have noticed that the asset returns have a standard deviation of 40% per year. The current market value of your equity equals $40 million. You believe that the firm can enter the commercial furniture business by spending $10 million. This will increase the value of the firm by $15 million.

b. If you go ahead with the expansion via a debt issue, how much will your equity be worth?
c. If you finance this expansion with risk free debt, what will the standard deviation of the return on the firm's equity equal?
d. What would the answers to b and c be if you financed the expansion with $5 million in equity and $5 million in risky debt instead? Just explain (in under five sentences) what would change, you cannot get a numerical solution!

6. Answer the following questions about fixed income price/return. (*10 points*)
   a. The price of a Treasury bond with a 12% coupon that matures on October 12, 2009, is quoted as 102-07. Today is March 5, 2005, 54 days after the previous semiannual coupon payment and 127 days before the next coupon payment. What is the cash bond price? (hint: the cash bond price includes quoted price and accrued interest)
   b. Suppose you bought a T-bill with face value 1000 at following market quotes.

Maturity	Days to Maturity	Bid	Ask	Change
June 27, 2005	90	4.81	4.77	-0.03

   What is the actual annual return (yield-to-maturity on an actual/365 day basis) you earn on the Treasury bill for the 90-day period?

7. Suppose the TAIEX spot index is at 6500 and the current repo rate is 4% annual rate. (*20 points*)
   a. what is the theoretical value (fair price) of a futures contract which expires in 0.5 year? (assuming no cash dividends during the period.)
   b. If the actual futures price is 6595, what will be the arbitrage profit in a perfect market?
   c. In an imperfect market, if the round-trip arbitrage costs additional 35 (index points) transaction costs, and the arbitrageur faces unequal borrowing rate (5%) and lending rate (3%), what are the no-arbitrage bounds?
   d. Given above no-arbitrage bounds, is there any arbitrage profit?

8. Below table contains the price quotes for the CBOE (Chicago Board Options Exchange) traded MicroSoft call options and put options. The MicroSoft stock is currently traded at $24.08. The "**05 Mar 17.50**" stands for an option with exercise price $17.5 and will expire in March 2005. The table shows the option premium, the daily trading volume, and the open interest. (*20 points*)

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a. What is open interest? Why are open interests substantially larger than the correspondent trading volume for all the March options?

b. List all the in-the-money calls and in-the-money puts (including March and April options) in the below table.

c. Explain why the **05 Apr 25.00 call** is more expensive than the **05 Mar 25.00 call**?

d. For only March puts, explain why the trading volume shows a pattern symmetric to the "**05 Mar 25.00**" put.

MSO　　　　　　　　**Spot price: 24.08**

Mar 10, 2005 @ 11:57 ET (Data 20 Minutes Delayed)

Calls	premium	Trading Volume	Open Interest	Puts	premium	Trading Volume	Open Interest
05 Mar 17.50	11.00	0	288	05 Mar 17.50	0.10	0	3388
05 Mar 20.00	4.10	27	867	05 Mar 20.00	0.30	78	3719
05 Mar 22.50	2.30	247	332	05 Mar 22.50	0.65	118	4521
05 Mar 25.00	0.75	410	5087	05 Mar 25.00	1.75	629	11330
05 Mar 30.00	0.05	108	12432	05 Mar 30.00	6.10	158	12248
05 Mar 35.00	0.05	22	19668	05 Mar 35.00	11.00	69	13319
05 Mar 40.00	0.05	0	8384	05 Mar 40.00	16.00	20	2119
05 Mar 45.00	0.05	0	2093	05 Mar 45.00	18.70	0	1001
05 Apr 20.00	0	0	0	05 Apr 20.00	1.30	3	0
05 Apr 22.50	0	0	0	05 Apr 22.50	2.15	15	0
05 Apr 25.00	1.50	208	1586	05 Apr 25.00	3.20	843	4033
05 Apr 30.00	0.30	120	4994	05 Apr 30.00	6.70	96	2381
05 Apr 35.00	0.10	115	5120	05 Apr 35.00	11.40	40	1770
05 Apr 40.00	0.05	0	2783	05 Apr 40.00	15.10	0	1071