

國立臺北商業技術學院 101 學年度研究所碩士班考試入學試題

准考證號碼：□□□□□□ (請考生自行填寫)

財務金融系碩士班

筆試科目：財務管理

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注意事項

1. 本科目合計 100 分，答錯不倒扣。
2. 請於答案卷上依序作答，並標註清楚題號 (含小題)。
3. 考完請將答案卷及試題一併繳回。

1. 為改善產品製程，北商公司正考慮出售甲乙兩台機器中之一台。兩台機器功能相同，但其中甲機器較新，若今日出售可賣得 1,000,000 元，其營運成本為每年 250,000 元，但 1 年後需再投入 200,000 元之檢修費用，之後其每年營運成本為 300,000 元，直至最後第 4 年底以 100,000 元出售；乙機器較舊，若今日出售可得 600,000 元，若要繼續使用，則必須立即花費 300,000 元整修，而之後每年營運成本將是 350,000 元，直至最後第 4 年底以 50,000 元出售。假設二機器今日均已折舊完畢，且擬重置之新機器與二機器之營運效率均相同，上述估計均為實質現金流量，若北商公司之稅率為 35%，實質資金成本為 10%，則應出售甲乙那台機器可使成本較低？(20 分)

2. Big Steel is considering making a bid for Small Steel. The following data applies to the analysis:

	<u>Big Steel</u>	<u>Small Steel</u>
Pre-merger stock price	\$75	\$100
Number of shares outstanding	500m	40m
Pre-merger market value	\$37,500m	\$4,000m
Estimated synergies	\$600m	

If Big Steel buys Small Steel by exchanging 1.45 shares of its stock for each share of Small Steel, what are the gains to Big Steel and Small Steel, respectively? (10 分)

3. A two-year zero-coupon bond issued by corporate XYZ is currently rated A. One year from now XYZ is expected to remain at A with 85% probability, upgraded to AA with 5% probability, and downgraded to BBB with 10% probability. The risk free rate is flat at 4%. The credit spreads are flat at 40, 80, and 150 basis points for AA, A, and BBB rated issuers, respectively. All rates are compounded annually. Estimate the expected value of the zero-coupon bond one year from now (for USD 100 face amount). (10 分)

4. A portfolio manager returns 12% with a standard deviation of 20%. The benchmark returns 8% with a standard deviation of 12%. The correlation between the two is 0.9. The risk-free rate is 4%. What are the Sharpe ratio and the information ratio of the portfolio? (10 分)

5. Two 10-year bonds are being considered for an investment that may have to be liquidated before the maturity of the bonds. The first bond is a 10-year premium bond with a coupon rate higher than its required rate of return, and the second bond is a zero-coupon bond that pays only a lump-sum payment after 10 years with no interest over its life. Which bond would have more interest rate risk? That is, which bond's price would change by a larger amount for a given change in interest rates? Explain your answer. (10 分)

背面尚有試題

6. 假設有 X、Y、Z 三種基金，期望報酬、標準差與  $\beta$  值如下表所示：

	期望報酬	標準差	$\beta$ (Beta)
基金 X	12%	20%	1.3
基金 Y	9%	15%	0.7
基金 Z	10%	12%	1
無風險利率	7%		

- (1) 請繪出證券市場線(SML)，並標示 SML 之截距與市場投組之位置，試問基金 X、Y、Z 會落在證券市場線上方或下方？(5 分)
- (2) 若分析師根據證券市場線作為投資決策，試分析基金 X、Y、Z 高估或低估？應買進或賣出何者？(5 分)
- (3) 試分別計算基金 X 與基金 Y 的夏普指標(Sharpe Index)以及崔諾指標(Treynor Index)？並說明為何這兩種指標所產生之基金績效排名有所差異？(5 分)

7. 請依據下列資料作答：

投資組合	期望報酬	標準差	$\beta$
A	12%	0.06	1.0
B	18%	0.10	1.3
C	11%	0.03	0.7
D	16%	0.07	1.2

\*無風險利率為 4 %

- (1) 依據 Sharpe measure，何者表現最佳？(3 分)
- (2) 依據 Treynor measure，何者表現最佳？(3 分)
- (3) 依據 Jensen measure，何者表現最佳？(3 分)
- (4) 那些組合位於 SML 上方？(3 分)
- (5) 那些組合位於 CML 下方？(3 分)

8. 若佳佳公司最近剛發放的股利為 3 元，每股盈餘為 4 元，證券市場的期望報酬率為 9%，而無風險利率為 7%。若該公司的  $\beta$  值為 1.5，且股東權益報酬率為 15%，請回答下列問題：

- (1) 股利成長率為何？(5 分)
- (2) 以股利折現模式(戈登模式)求算之公平市值為何？(5 分)

試題結束