

淡江大學 99 學年度碩士班招生考試試題

77-1

系別：財務金融學系

科目：財 務 管 理

准帶項目請打「V」	
✓	計 算 機

本試題共 2 頁，9 大題

本試題雙面印製

※ 下列各題只寫答案，沒有寫出運算證明過程不予計分。

1. Suppose you purchase \$1,000 of stock *A*, purchase \$500 of stock *B*, and borrow \$500.

(A)(6%) If these transactions constitute your entire portfolio, what are the portfolio weights for each component of the portfolio?

(B)(10%) Compute the variance and expected return of the portfolio in (A), given the following additional information:

	<i>A</i>	<i>B</i>
Variance	0.25	0.49
Expected return	0.10	0.16

The correlation of *A* with *B* is 0.7. Borrowing takes place at a risk-free interest rate of 0.05.

2. Consider two securities with the following characteristics:

Security	Expected return	Standard deviation
<i>X</i>	0.10	0.05
<i>Y</i>	0.04	0.10

Suppose the correlation coefficient between *X* and *Y* is +1.

(A)(4%) Suppose you build a portfolio with equal dollar amounts in the two securities. Compute the *standard deviation* of the portfolio.

(B)(5%) If you are considering only combinations of *X* and *Y*, what is the portfolio weight for *Y* which will define a portfolio having the smallest possible variance?

3. You invest in zero coupon bonds. One matures in 1 year paying \$100. Its price is \$56.93. The other matures in 2 years paying \$1,100. Its price is \$943.07.

(A)(5%) Compute the true internal yield to maturity on the portfolio of the two bonds.

(B)(5%) Compute the true Macaulay duration of the portfolio of the two bonds.

4.(6%) A firm currently has a debt-equity ratio of 1/2. The debt, which is virtually riskless, pays an interest rate of 6%. The expected rate of return on the equity is 12%. What would happen to the expected rate of return on equity if the firm reduced its debt-equity ratio to 1/3? Assume the firm pays no taxes.

◀ 注意背面尚有試題 ▶

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5. ABC common stock is expected to have extraordinary growth of 20% per year for two years, at which time the growth rate will settle into a constant 6%.
 - (A)(8%) If the discount rate is 15% and the most recent dividend was \$2.50, what should the stock price be today?
 - (B)(8%) What is your prediction for the stock price in 1 year?
 - (C)(3%) Show that the expected rate of return equals the discount rate.

6. (6%) A currently used machine costs \$10,000 annually to run. What is the maximum that should be paid to replace the machine with one that will last three years and cost only \$4,000 annually to run? The opportunity cost of capital is 12%.

7. (6%) Your consulting firm will produce cash flows of \$100,000 this year, and you expect cash flow to keep pace with any increase in the general level of prices. The interest rate currently is 6%, and you anticipate inflation of about 2%. What is the present value of your firm's cash flows for years 1 through 5?

8. A couple will retire in 50 years; they plan to spend about \$30,000 a year in retirement, which should last about 25 years. They believe that they can earn 8% interest on retirement savings.
 - (A)(8%) If they make annual payments into a savings plan, how much will they need to save each year? Assume the first payment comes in 1 year.
 - (B)(8%) How would the answer to part (A) change if the couple also realize that in 20 years, they will need to spend \$60,000 on their child's college education?

9. (12%) Calculate the NPV for the following capital budgeting proposal: \$100,000 initial cost, to be depreciated straight-line over five years to an expected salvage value of \$5,000, 35% tax rate, \$45,000 additional annual revenues, \$15,000 additional annual expense, \$8,000 additional investment in working capital, 11% cost of capital.