

考 試 科 目	財務管理	系 所 別	金融學系	考 試 時 間	2 月 6 日(二) 第 三 節
---------	------	-------	------	---------	------------------

Part I: Short answer questions (45 points).

- (15 points) How is duration linked to convexity in bond portfolio management, and what attracts investors to convexity?
- (20 points) What constitutes a private equity fund, and could you explain its operational mechanics and functions?
- (10 points) Define agency problems and suggest at least one method to alleviate potential issues related to agency problems.

Part II: Calculations. Calculation process is shown for full credit (55 points).

- (5 points) A firm has a stock price of \$50 per share and a P/E ratio of 70. If you buy the stock at this P/E and earnings fail to grow at all, how long should you expect it to take to just recover the cost of your investment?
- (5 points) The tax burden of the firm is 0.7, the interest burden is 0.5, the profit margin is 0.3, the asset turnover is 1.8, and the leverage ratio is 1.3. What is the ROE of the firm?
- (10 points) You consider buying a share of stock at a price of \$30. The stock is expected to pay a dividend of \$2 next year, and your advisory service tells you that you can expect to sell the stock in 1 year for \$35. The stock's beta is 1.8, r_f is 5%, and $E[r_m] = 12\%$. What is the stock's abnormal return?
- (10 points) A pension fund has an average duration of its liabilities equal to 20 years. The fund is looking at 8-year maturity zero-coupon bonds and 5% yield perpetuities to immunize its interest rate risk. How much of its portfolio should it allocate to the zero-coupon bonds to immunize if there are no other assets funding the plan?
- (10 points) You manage a hedge fund with \$200 million in assets. Your fee structure provides for a 1% annual management fee with a 20% incentive on returns over a 15% benchmark. If the fund value, before fees, is \$270 million at the end of the year, what is the net return to the investors?
- (15 points) An investor buys \$20,000 worth of a stock priced at \$25 per share using 70% initial margin. The broker charges 9% on the margin loan and requires a 35% maintenance margin. The stock pays a \$.80-per-share dividend in 1 year, and then the stock is sold at \$30 per share. What was the investor's rate of return?

備 註	一、作答於試題上者，不予計分。 二、試題請隨卷繳交。
-----	-------------------------------