

國立東華大學財務金融學系 106 學年度第二學期 中級財務管理第一次小考

- ◇ 計算題務必寫出過程、使用千分位符號(,)以及小數點標示清楚
 - ◇ 若題目沒有特別說明，請計算至小數點以下第 2 位，第 3 位四捨五入。表示方式如 1,234.56，78.09%。
 - ◇ 滿分 120 分
1. (20 分) 請說明效率市場假說 (efficient market hypothesis) 的定義、假設與類型。並說明行為財務學 (behavioral finance) 對效率市場假說提出的質疑。
 2. (20 分) KT (1979) 指出傳統理性預期效用理論無法完全描述在不確定情況下的決策行為，並據此提出展望理論 (prospect theory) 來說明個人的選擇問題，利用價值函數和決策權數函數描述個人的選擇行為。請用文字並繪圖說明展望理論的價值函數及決策權數函數的特性。
 3. (20 分) Consider a project with free cash flows in one year of \$137,022 or \$188,017, with each outcome being equally likely. The initial investment required for the project is \$100,655, and the project's cost of capital is 20%. The risk-free interest rate is 11%.
 - (1). (7 分) What is the NPV of this project?
 - (2). (7 分) Suppose that to raise the funds for the initial investment, the project is sold to investors as an all-equity firm. The equity holders will receive the cash flows of the project in one year. How much money can be raised in this way—that is, what is the initial market value of the unlevered equity?
 - (3). (6 分) Suppose the initial \$100,655 is instead raised by borrowing at the risk-free interest rate. What are the cash flows of the levered equity, and what is its initial value according to MM?
 4. (20 分) Hardmon Enterprises is currently an all-equity firm with an expected return of 12%. It is considering a leveraged recapitalization in which it would borrow and repurchase existing shares.
 - (1). (7 分) Suppose Hardmon borrows to the point that its debt-equity ratio is 0.50. With this amount of debt, the debt cost of capital is 5%. What will the expected return of equity be after this transaction?
 - (2). (7 分) Suppose instead Hardmon borrows to the point that its debt-equity ratio is 1.50. With this amount of debt, Hardmon's debt will be much riskier. As a result, the debt cost of capital will be 7%. What will the expected return of equity be in this case?

- (3). (6 分) A senior manager argues that it is in the best interest of the shareholders to choose the capital structure that leads to the highest expected return for the stock. How would you respond to this argument?
5. (20 分) Pelamed Pharmaceuticals has EBIT of \$133 million in 2006. In addition, Pelamed has interest expenses of \$49 million and a corporate tax rate of 35%.
- (1). (5 分) What is Pelamed's 2006 net income?
- (2). (5 分) What is the total of Pelamed's 2006 net income and interest payments?
- (3). (5 分) If Pelamed had no interest expenses, what would its 2006 net income be? How does it compare to your answer in part b?
- (4). (5 分) What is the amount of Pelamed's interest tax shield in 2006?
6. (12 分) Arnell Industries has just issued \$15 million in debt (at par). The firm will pay interest only on this debt. Arnell's marginal tax rate is expected to be 35% for the foreseeable future.
- (1). (4 分) Suppose Arnell pays interest of 7% per year on its debt. What is its annual interest tax shield?
- (2). (4 分) What is the present value of the interest tax shield, assuming its risk is the same as the loan?
- (3). (4 分) Suppose instead that the interest rate on the debt is 6%. What is the present value of the interest tax shield in this case?
7. (8 分) Ten years have passed since Arnell issued \$15 million in perpetual interest only debt with a 7% annual coupon, as in Problem 6. Tax rates have remained the same at 35% but interest rates have dropped so Arnell's current cost of debt capital is 2%.
- (1). (4 分) What is Arnell's annual interest tax shield?
- (2). (4 分) What is the present value of the interest tax shield today?