

本試題是否可以使用計算機： 可使用， 不可使用（請命題老師勾選）

考試日期：0302，節次：2

回答問題時，需就每題中的各小題分別作答。例如：在第 1 大題中，共有 4 個子問題，答題時需就各個子問題分別作答。

1. (25%) Under what circumstances would it be appropriate for a firm to use different costs of capital for its different operating divisions? If the overall firm WACC were used as the hurdle rate for all divisions, would the riskier divisions or the more conservative divisions tend to get most of the investment projects? Why? If you were to try to estimate the appropriate cost of capital for different divisions, what problems might you encounter? What are two techniques you could use to develop a rough estimate for each division's cost of capital?

2. (25%) Assume a firm's debt is risk-free, so that the cost of debt equals the risk-free rate, R_f . Define β_A as the firm's asset beta, that is, the systematic risk of the firm's assets. Define β_E to be the beta of the firm's equity. Use the capital asset pricing model, CAPM, along with M&M Proposition II to show that $\beta_E = \beta_A \times (1 + D/E)$, where D/E is the debt-equity ratio. Assume the tax rate is zero. Moreover, suppose a firm's business operations are such that they mirror movements in the economy as a whole very closely, that is, the firm's asset beta is 1.0. Use the above result to find the equity beta for this firm for debt-equity ratios of 0, 1, 5, and 20. What does this tell you about the relationship between capital structure and shareholder risk? How is the shareholders' required return on equity affected? Explain.

(背面仍有題目,請繼續作答)

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3. (30%) Your company is looking at a new project in Mexico. The project will cost 9 million pesos. The cash flows are expected to be 2.25 million pesos per year for 5 years. The current spot exchange rate is 9.08 pesos per dollar. The risk-free rate in the US is 4% and the risk-free rate in Mexico 8%. The dollar required return is 15%. Should the company make the investment? Please present your answers in (1) home currency approach and (2) foreign currency approach. (即便無法

計算出精確的數字，若可詳列計算過程，仍可得到本題的全部分數)

4. (20%) The calculation of credit risk depends critically on the probability of default (PD). The most famous PD estimation method is Altman's Z score. Please describe it in detail. Moreover, what are its limitations in practical? What are the solutions to its limitations?