UNIVERSITI SAINS MALAYSIA

Second Semester Examination
Academic Session 1997/98

February 1998

AGW606/619 - CORPORATE FINANCE

Time : [3 hours]

INSTRUCTIONS :

Please ensure that this examination paper consists of **FOUR (4)** printed pages before you begin.

Answer Question **ONE (1)** and **FOUR (4)** other questions.

1. " The Kuala Lumpur stock Exchange Composite Index has dropped by more than 50% during 1997. Most of this fall took place in the last three months of 1997. Real economic growth, though slowing down, is still expected to be more than 7%. Surely the the efficient market hypothesis is not valid for the KLSE ".

   (a) What is meant by the efficient market hypothesis? In your answer distinguish between the three forms of market efficiency.

   [8 marks]

   (b) How would you respond to the above comment?

   [12 marks]

2. (a) Respond to the following comment: "It's no good just telling me to maximize my stock price. I can easily take a short term view and maximize today's price. What I would prefer is to keep it on gently rising trend ".

   [6 marks]

   (b) Compost Science, Inc. (CSB). is in the business of converting Penang's sewage sludge into fertilizer. The business is not in itself very profitable. However, to induce CSB to remain in business, the Penang State Government has agreed to pay whatever amount is necessary to yield CSB a 10 percent book return on equity. At the end of the year CSB is expected to pay a RM0.40 dividend. It has been reinvesting 40 percent of earnings and growing at 4 percent a year.

(i) Suppose CSB continues on this growth trend. What is the expected long run rate of return from purchasing the share at RM10.00? What part of the RM10.00 price is attributable to the present value of growth opportunities?

(ii) Now the Penang State Government announces a plan for CSB to treat Butterworth sewage. CSB's plant will, therefore, be expanded gradually over 5 year. This means that CSI will have to reinvest 80 percent of its earnings for 5 years. Starting in year 6, however, it will again be able to pay out 60 percent of earnings. What will be CSB's share price once this announcement is made and its consequences for CSB are known?

[14 marks]

3. (a) "Many debt issues are either packages of bonds and warrants or convertibles." (Brealey & Myers, p.617). Discuss the similarities and difference between a convertible and a package of bonds and warrants.

[8 marks]

(b) Financing with convertible debt is especially appropriate for small, rapidly growing, or risky companies. Briefly explain why.

[4 marks]

(c) Describe each of the following situations in the language of options:

(i) Drilling rights to undeveloped heavy crude oil in southern California. Development and production of the oil now is a negative-NPV endeavor. (The break-even oil price is $32 per barrel, versus a spot price of $20). However, the decision to develop can be put off for up to 5 years. Development costs are expected to increase by 5 percent per year.

(ii) A restaurant is producing net cash flow, after all out-of-pocket expenses, of RM700,000 per year. There is no upward or downward trend in the cash flows, but they fluctuate, with an annual standard deviation of 15 percent. The real estate occupied by the restaurant is owned, not leased, and could be sold for RM5 million. Ignore taxes.

[8 marks]

4. (a) As a result of improvements in product engineering, United Automation is able to sell one of its two milling machines. Both machines perform the same function but differ in age. The newer machine could be sold today for RM50,000. Its operating costs are RM20,000 a year, but in 5 years the machine will require a RM20,000 overhaul. Thereafter operating costs will be RM30,000 until the machine is finally sold in year 10 for RM5,000.

The older machine could be sold today for RM25,000. If it is kept, it will need an immediate RM20,000 overhaul. Thereafter operating costs will be RM30,000 a year until the machine is finally sold in year 5 for RM5,000.

Both machines are fully depreciated for tax purposes. The company pays tax at 35 percent. Cash flows have been forecasted in real terms. The real costs of capital is 12 percent.

Which machine should United Automation sell? Explain the assumptions underlying your answer.

[10 marks]

(b) Suppose a firm uses its company cost of capital to evaluate all capital projects. What kinds of mistakes will it make?

[3 marks]

(c) New-model commercial airplanes are much more fuel-efficient than older models. How is it possible for an airline flying older models to make money when its direct competitors are flying newer planes? Explain.

[3 marks]

(d) True or false? Why?

(i) Project analysis is unnecessary for projects with asset betas that are equal to zero.

(ii) High abandonment value increases NPV, other things being equal.

[4 marks]

5. (a) True or false? Why? "Diversification reduces risk. Therefore corporations ought to favor capital investment with low correlations with their existing lines of business."

[4 marks]

(b) Compare the capital asset pricing model and the arbitrage pricing model, noting carefully their similarities and differences.

[10 marks]

(c) Meredith Bhd is financed with RM25 million of (risk-free) debt and RM50 million of ordinary shares, which has a beta of 1.6. The risk-free rate is 4%, and the expected return on the market portfolio is 13%. If the company issues RM25 million more ordinary shares and uses the proceeds to buy back all the outstanding debt. what will be

(i) the company cost of capital?
(ii) the cost of equity capital?

[6 marks]

6. (a) Here is recent financial data on Pisa Construction Bhd:

- Share price: RM4.00
- Number of shares: 100,000
- Book net worth: RM500,000
- Market value of firm: RM400,000
- Earnings per share: RM0.40
- Return on investment: 8 percent

Pisa has not performed spectacularly to date. However, it wishes to issue new shares to obtain RM80,000 to finance expansion into a promising market. Pisa's financial advisers think a share issue is a poor choice because, among other reasons, "sale of shares at a price below book value per share can only depress the share price and decrease shareholders' wealth." To prove the point they construct the following example: "Suppose 20,000 new shares are issued at RM40 and the proceeds invested. (Neglect issue costs.) Suppose return on investment does not change. Then

Book net worth	=	RM580,000		
Total earnings	=	0.08 (580,000)	=	RM46,400
Earnings per share	=	46,400/120,000	=	RM0.387

Thus, EPS declines, book value per share declines, and share price will decline proportionately to RM3.87."

Evaluate this argument with particular attention to the assumptions implicit in the numerical example.

[8 marks]

(b) For each of the following four groups of companies, state whether you would expect them to distribute a relatively high or low proportion of current earnings and whether you would expect them to have a relatively high or low price-earnings ratio.

(i) High-risk companies.
(ii) Companies that have recently experienced an unexpected decline in profits.
(iii) Companies that expect to experienced a decline in profits.
(iv) "Growth" companies with valuable future investment opportunities.

[8 marks]

(c) Each of the following statements is false or at least misleading. Explain why.

(i) "A capital investment opportunity offering a 10 percent DCF rate of return is an attractive project if it can be 100 percent debt-financed at an 8 percent interest rate."

(ii) "The more debt the firm issues, the higher the interest rate it must pay. That is one important reason why firms should operate at conservative debt levels."

[4 marks]

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