GX23

Ollscoil na hÉireann, Gaillimh

National University of Ireland, Galway

Summer Examinations 2000

Bachelor of Commerce Degree Examination

Business Finance II (AY 314)

Higher Diploma in Business Studies Examination

Financial Management II (AY 875)

Professor R. W. Scapens

Professor S. Collins

Time Allowed: Two Hours.

Answer BOTH questions in Section A, and ONE question from Section B.

Separate answer books are not required.

Present Value tables and a table of Financial Formulae are attached.

Section A
(Answer both questions)

Question 1

Wicklow Industries plc is a company with two subsidiaries, Bray Ltd. and Arklow Ltd., both of which operate as decentralised business units. Bray Ltd. manufactures computer equipment, while Arklow Ltd. operates in the food industry.

The Financial Controller is considering the development of divisional costs of capital for use in investment decision making, and as a basis for judging the adequacy of the return on capital employed earned by the subsidiaries.

The following information is available:

- The overall equity beta for Wicklow Industries is 0.9.
- Wicklow Industries finances all activities using a debt to equity ratio of 50%.
- The expected cost of debt for the company is 12% before tax.
- The rate of corporation tax for all companies in these industries is 30%.
- The expected return on the stock market is 20% per annum, and the risk-free rate is 12%.
- Market studies of other companies in the computer manufacturing industry and in the food industry produced the following average data:

	Computers	**Food**
Average Equity Beta	1.4	0.8
Average Debt : Equity Ratio	50%	80%

Required:

(a) Calculate the unleveraged equity beta (or asset beta) for the computer industry, and the food industry.
(6 Marks)

(b) Estimate appropriate divisional weighted average costs of capital for the two subsidiaries, and compare these capital costs with the weighted average cost of capital (WACC) for Wicklow Industries plc.
(15 Marks)

(c) Explain the importance of using division-specific costs of capital rather than the company's WACC for the purposes outlined above.
(8 Marks)

(d) Outline the limitations of the adjustment procedures you have used.
(6 Marks)

(Total: 35 Marks)

Question 2 begins on the next page. ***P.T.O.*** ⇒

Question 2

DVD Plc is a music publishing company which is listed on the Stock Exchange. The Board of DVD has recently decided that the company should seek to grow by acquisition, and accordingly, suitable target companies are being sought. The company is currently reviewing **CD Plc**, a smaller company engaged in a similar line of business and quoted on the Alternative Investment Market. The following information is available:

	DVD Plc	**CD Plc**
Number of Shares	12,000,000	10,000,000
After-tax Earnings	£3,000,000	£1,250,000
Share Price	£4.00	£1.00
Earnings per Share (EPS)	£0.25	£0.125
Price-Earnings Ratio (PE)	16	8

Following a more detailed review, the following information is also available:

- Subsequent to acquisition, restructuring and rationalisation could take place which would result in after-tax cash flow savings of £300,000 in the year following the takeover, and these annual savings are expected to grow each year thereafter at a constant rate of 2% per year.
- The disposal of surplus assets following acquisition should realise £1.2 million after taxes at the end of the first year.
- A once-off early retirement programme to be implemented as part of the rationalisation would cost £500,000 after taxes immediately.
- The legal, financial, advisory, and other costs of completing the takeover are expected to amount to £400,000 after taxes.
- The relevant cost of capital is 20%.

Required:

(a) Estimate the value of the net benefits from this merger, and the post-acquisition value of the DVD Group (i.e. DVD and CD combined).
(10 Marks)

(b) Calculate (i) the maximum cash offer, and (ii) the maximum share-for-share offer which DVD Plc could afford to bid for the shares of CD Plc.
(10 Marks)

(c) Assume that DVD offers one of its shares for every four shares in CD. Determine how this offer would allocate the benefits of the merger between the shareholders of the two companies.
(8 Marks)

(d) Suppose that no synergies of benefits are anticipated from the merger between DVD and CD, and the merger is effected by an exchange of shares at the rate of 1 share in DVD for every 4 shares in CD. Without doing any calculations, explain the effect this would have on the reported earnings per share of the DVD Group.
(7 Marks)

(Total: 35 Marks)

Section B begins on the next page. ***P.T.O.*** ⇒

Section B
(Answer one question)

Question 3

You are given the following information about two quoted shares:

Company	Expected Return %	Standard Deviation %
Prefect Plc	20%	10%
Anglia Plc	14%	8%

The risk-free rate is 8% and the expected return on the market portfolio is 23%. The standard deviation of returns on the market portfolio is 10%.

Required:

(a) Calculate the expected return and the standard deviation of returns for a portfolio consisting of 50% invested in Prefect and 50% invested in Anglia, assuming the correlation between the two returns distributions is +0.2.

(6 Marks)

(b) Assume instead that the returns on these shares are perfectly negatively correlated. Identify the portfolio strategy yielding a risk free return, and calculate that rate of return.

(8 Marks)

(c) Statistical analysis reveals the following correlation coefficients between the returns on these shares, and the returns on the market portfolio:

Company	Market Portfolio
Prefect Plc	+0.8
Anglia Plc	+0.6

Calculate the betas of the two shares, and identify whether these shares are properly valued at their present prices.

(8 Marks)

(d) The CAPM is a special case of the Arbitrage Pricing Theory (APT) model. Explain this statement.

(8 Marks)

(Total: 30 Marks)

Question 4 begins on the next page. ***P.T.O.*** ⇒

Question 4

Explain how each of the following may (individually) affect the capital structure decision of a public company:

- company taxes
- financial distress costs
- the nature of company assets
- operating leverage (gearing)
- management welfare considerations.

(30 Marks)

Question 5:

(a) When interest-rate parity is fully reflected in the "swap" rate (i.e. the forward-spot differential), investors should be indifferent to the location of a short-term bank deposit.

Use the following data to illustrate this fact for an investor with £10,000 to invest for one year:

Spot Exchange Rate:
US$/£: $1.30 per £

Interest Rates: (Fixed for one year):
US$ 5% per annum
£ 8% per annum

(15 Marks)

(b) Explain the term "contingent currency exposure", and give reasons why a currency option is superior to a fixed forward contract in covering a contingent currency exposure.

(15 Marks)

(Total: 30 Marks)

(End of Question Paper)