



Institute of Incorporated Public Accountants

Final Admitting Examination

Module 14: Financial Management

28th. August 2014

2pm – 5pm

Instructions: Answer five questions

Section A

All three questions to be attempted

Section B

Two of the three questions to be attempted

Formulas and Discount Tables provided at the rear of this paper

Time Allowed: 3 Hours

Section A: All three questions to be attempted

Section A (70 marks in Total)

Question 1

Dohpler is a maker of a very popular music player App. It has 1,000 bonds outstanding with a face value of €1,000 each. They have a market value of €1,050 each and an after tax return of 5%. It also has 25,000 of preferred stock outstanding with a face value of €10 each. They have a market value of €11.21 each and an after tax return of 8%. The current market value of Dohpler's 100,000 ordinary shares outstanding is €24 per share ex-dividend. Dohpler's beta is 1.5, the risk-free rate is 0.5 percent, and the return on the ISEC index (the market proxy) is 12.5 percent.

Dohpler's software developers are excited that they have developed a new music trivia App. They expect the new App to increase earnings after tax by €10,000 now and then expect the earnings to grow by 30 percent by next year, 15 percent the following year, and then grow at a constant growth rate of 10 percent forever thereafter. Dohpler has a policy of paying out 50 percent of after tax EPS as dividends the year after the earnings arise.

Alternatively they could sell all rights to the new music trivia App now to a mobile phone company. But Dohpler would have to agree not to develop any similar Apps to compete with this App for at least five years. In return Dohpler shareholders would receive €100,000 now.

Required

- a) Ignoring the potential new investment, calculate the cost of capital that Dohpler should use as a discount rate when appraising new marginal investment opportunities. **(6 Marks)**
- b) Given that if they keep the new App they forego €100,000 now, using the Free Cash Flow approach, find the present value of the new investment opportunity. You may assume that all estimates are correct and ignore the value of any real or embedded options. Use the cost of capital you have found in part (a) for the appropriate discount rate. **(6 Marks)**
- c) Given that if they keep the new App they forego €100,000 now, find the (approximate) IRR of keeping the App. You may assume that all estimates are correct and ignore the value of any real or embedded options. You should use the cost of capital you have found in part (a) and 35% to start your calculation of the IRR. **(8 Marks)**
- d) Given that if they sell the App they may not compete with this App for at least five years, discuss the different types of real or embedded options that arise from investments and how they can even transform apparently negative NPV projects into potentially positive NPV projects! **(5 Marks)**

(25 Marks in Total)

Question 2

Lekua Ltd. has asked you to help them in their decision as to whether they should buy a new computer storage system or “migrate to the cloud” which their accounts department says can be thought of as a lease. The firm pays 12.5 percent tax, and its after-tax cost of debt is currently 6 percent. The terms of the purchase and of “migrating to the cloud” are as follows:

I) Purchase the new computer storage system:

The cost of the new computer storage system is €250,000 paid on delivery (today). This can be financed entirely with a 9 percent loan requiring annual end-of-year payments of €64,273.11 for five years. The firm in this case will depreciate the equipment using straight line depreciation over 5 years. In addition it has budgeted €5,000 paid end-of-year annually for running expenses etc., (a service contract that covers all software upgrading, maintenance costs etc. and to pay electricity and other costs, e.g. insurance). The firm plans to keep the equipment and use it beyond the 5 year depreciation period.

II) “Migrate to the cloud” / Lease:

Instead of purchasing a new computer storage system they have been offered the alternative of “Migrating to the cloud”. Their “Cloud Computer Supplier” would install all necessary “gateway” equipment to allow fast connection to the cloud server free of charge now. Thus they would no longer have to pay for all the running expenses mentioned above. They could also reuse one of the rooms they use for their current computer storage system. They therefore estimate that even allowing for the additional cost of paying for computer storage in the cloud, given the other savings, they will pay the equivalent of five beginning-of-year payments of €60,000 per year over the life of the contract (starting today). However should they choose not to renew the contract with the supplier they must pay an exit fee of €60,000. The exit fee is to be paid along with the fifth (final) lease payment. The accounts department feels for prudential reasons they should include the exit payment in any calculations.

Required

- a) Calculate the after-tax cash outflows associated with each alternative.
(11 Marks)
- b) Calculate the present value of each cash outflow stream using the after-tax cost of debt and explain which alternative you would you recommend and why?
(9 Marks)
- c) Describe the two basic types of leases available and explain the advantages and disadvantages of leasing.
(5 Marks)

Note: for simplicity you may assume that all payments are paid just once a year. For beginning-of-year payments the first payment is today and then one year from today and so on. For end-of-year payments the first is one year from today and then one year later and so on.

(25 Marks in Total)

Question 3

It is March and Mr D’Arcy, the owner of XYZ Company Ltd. has confirmed that XYZ is to receive \$25 million in June which is in 3 months’ time. However XYZ will need \$25.3 million in 9 months’ time. You may assume that there are no uncertainties to the timing or the amounts of these cash flows. Thus Mr D’Arcy wants to invest the \$25 million for six months (you may assume for interest calculations that six months is exactly one half of a year) at minimum risk and preferably for a certain return. However Mr D’Arcy is afraid that interest rates on the US dollar, already low, could fall further. He therefore feels that an FRA might be the solution. He has been quoted “3.10 – 3.40% for the 3V9 US Dollar FRA”, (See Note 1 below).

Required:

- a) Explain (without calculations) how a Forward Rate Agreement could work to protect XYZ from a fall in interest rates and in particular how and when the profits and losses are recognised and discounted. **(4 marks)**
- b) Assume that over the three months to June, US Dollar interest rates do indeed fall. In June the level of US Dollar falls to just 1% p.a. and the best fixed six month bank deposit rate offered to XYZ has fallen to just 0.75% p.a., (i.e. three quarters of one per cent per annum).

Required:

Using the information above, explain (with calculations), how the Forward Rate Agreement will work to protect XYZ from the fall in interest rates and in particular how and when the actual profits from the FRA are recognised and discounted. In your answer, show how the cash position of XYZ will have been altered with and without the FRA and hence its ability to finance its requirement of \$25.3 million in 9 months’ time. **(10 marks)**

Note 1: When XYZ is quoted “3V9 US Dollar FRA”, the 3V9 refers to a notional principal to be deposited (borrowed) being invested (lent) in three months’ time for the following six months, a total of nine months. “3.10 – 3.40% for the 3V9” refers to the rates offered. An annual rate of 3.1% on the notional deposit will be the agreed deposit rate and an annual rate of 3.4% on the notional loan will be the agreed loan rate.

- c) The table below shows the Beta and standard deviation for two random shares and a portfolio made up of 50% in Share #1 and 50% in Share #2.

Required:

Is the information shown in the table possible and / or believable? Explain.

Share	Beta	Standard Deviation
# 1	3	10
# 2	1	20
50:50 Portfolio	2	15

(6 Marks)
(20 Marks in Total)

Section B: two (2) of the following three (3) questions to be attempted

Section B (30 marks in Total)

Question 4

- a) What are the benefits of going public and floating on the Irish Stock Exchange's (ISE)'s markets?
(5 Marks)
- b) What are the costs (in every sense of the word) of going public and floating on the Irish Stock Exchange's (ISE)'s markets?
(5 Marks)
- c) Compare and contrast the main differences to achieving a listing on the Enterprise Securities Market (ESM) compared to the Main Securities Market (MSM) of the Irish Stock Exchange (ISE).
(5 Marks)
(15 Marks in Total)

Question 5

Explain with the aid of a diagram(s) if and how caps, floors and collars can reduce interest rate risk for (i) a borrower and (ii) a saver. Your explanation should refer to the theoretical nature of these instruments as well as their practical uses.

(15 Marks in Total)

Question 6

Write short notes on **three (3)** of the following **six (6)** topics:

- a) The term structure of interest rates and the normal yield curve.
- b) Why the separation of the roles of the Chief Executive Officer and the Chairman is considered desirable.
- c) In capital structure decisions: the pecking order for financing.
- d) How the form of payment will affect the likelihood of a successful acquisition.
- e) Internal hedging techniques available to large Irish firms to manage their foreign currency exchange risks.
- f) The relationship between working capital and profitability.

(3 x 5 Marks)
(15 Marks in Total)

Formulas and Discount Tables

Present Value of a once off Future Payment:

$$PV = FV / (1+r)^t$$

Where: PV = Present Value
 FV = Future Value
 r = Discount rate
 t = Number of periods i.e. time.

Present Value of a Growing Perpetuity:

$$PV = C1 / (r - g)$$

Where: PV = Present Value (in period 0)
 C1 = Cash Flow in period 1
 r = discount rate
 g = (Constant) Growth in Cash Flows to infinity.

$$IRR \text{ (Approx)} = a + \{[A / (A - B)] \times (b - a)\}$$

Where: a = lower discount rate
 b = higher discount rate
 A = NPV at lower discount rate
 B = NPV at higher discount rate

	Discount Factor	
	r =	r =
Year	6.00%	35.00%
0	1.0000	1.0000
1	0.9434	0.7407
2	0.8900	0.5487
3	0.8396	0.4064
4	0.7921	0.3011
5	0.7473	0.2230