

Examiner's report

F9 Financial Management

March 2016



Introduction

The overall performance at the March 2016 diet could have been better, although there were some excellent individual performances.

General Paper Comments

The examination consisted of two sections. Section A contained twenty objective test questions for a total of 40 marks and Section B contained three questions of 10 marks each, and two questions of 15 marks each (total 60 marks).

Candidates must study the entire syllabus and will not be successful in the examination if they seek to rely on 'question spotting' in a few selected syllabus areas.

Candidates must take great care when presenting answers to numerical questions in Section B. It is good examination technique to show all workings, as marks can be gained for applying a correct method even when numerical errors have been made. All workings should, of course, be labelled. It is also good examination technique to make sure the question requirement is being addressed. For example, if the question requirement is for a discussion, very few marks are likely to be awarded for a brief list.

Section A

It was good to see that almost all candidates attempted all of the questions. Candidates preparing for the F9 examination are advised to work through the specimen exam, past exam papers and any questions available from recommended study texts, and to carefully review how correct answers are derived and presented.

Section A questions aim to provide a broad coverage of the syllabus and as said earlier, future candidates must therefore study and revise all areas of the F9 syllabus.

The following questions are reviewed with the aim of giving future candidates an indication of the types of questions asked and guidance on dealing with such exam questions.

Example 1 is numerical and illustrates the importance of understanding important models in the F9 syllabus.

Example 2 is a question requiring knowledge of hedging instruments and principles and illustrates how all parts of the F9 syllabus can be examined.

Example 1

Cant Co has a cost of equity of 10% and has forecast its future dividends as follows:

Current year: No dividend
 Year 1: No dividend
 Year 2: \$0.25 per share
 Year 3: \$0.50 per share and increasing by 3% per year in subsequent years

What is the current share price of Cant Co using the dividend valuation model?

- A \$7.35
- B \$5.57
- C \$6.11
- D \$6.28

This question, which addresses part F2c(i) of the F9 Syllabus and Study Guide, has been chosen because only a minority of candidates were able to provide the correct response. The dividend valuation model (DVM) and the dividend growth model (DGM) are important models in the Syllabus. The correct response is as follows:

C

Share price = $(0.826 \times 0.5) / (0.1 - 0.03) + (0.25 \times 0.826) = \6.11 per share

The DVM states that the ex dividend market value of an ordinary share is equal to the present value of the future dividends paid to the owner of the share. No dividends are to be paid in the current year and in year 1, so the value of the share does not depend on dividends from these years. The first dividend to be paid is in year 2 and this dividend is different from the dividend paid in year 3 and in subsequent years. The present value of the year 2 dividend, discounted at 10% per year, is $(0.25 \times 0.826) = \$0.2065$

The dividends paid in year 3 and subsequently can be valued using the DGM. By using the formula $P_0 = D_1 / (r_e - g)$ we can calculate the present value of the future dividend stream beginning with \$0.50 per share paid in year 3. This present value will be a year 2 value and will need discounting for two years to make it a year 0 present value.

$$P_0 = (0.826 \times 0.5) / (0.1 - 0.03) = 0.826 \times 7.1429 = 5.90$$

An alternative approach is to discount the year 3 dividend by 0.826 to give a year 1 dividend, and then apply the dividend growth model $P_0 = D_1 / (r_e - g)$. Mathematically, this is the same, as follows:

$$(0.826 \times 0.5) / (0.1 - 0.03) = 0.413 / (0.1 - 0.03) = 0.413 / 0.07 = 5.90$$

The current share price is then the sum of the two present values:

$$P_0 = 5.90 + 0.2065 = \$6.11 \text{ per share}$$

A *Not discounting the DGM value from year 2*

This incorrect answer involved adding the present value of the year 2 dividend to the undiscounted year 2 DGM value:

$$\text{Share price} = 0.5 / (0.1 - 0.03) + (0.25 \times 0.826) = \$7.35 \text{ per share}$$

B *Discounting the DGM value from year 2 by three years*

This incorrect answer took the DGM value as being in year 3 rather than year 2 and consequently discounted it by three years instead of two years:

$$\text{Share price} = (0.751 \times 0.5) / (0.1 - 0.03) + (0.25 \times 0.826) = \$5.57 \text{ per share}$$

D *Treating the year 3 dividend as D_0 instead of D_1*

This incorrect answer took the year 3 dividend of \$0.50 per share and multiplied it by $(1 + g)$, thereby treating the dividend as though it were D_0 , in DGM terms, when in fact it was D_1 .

$$\text{Share price} = (0.826 \times 0.5 \times 1.03) / (0.1 - 0.03) + (0.25 \times 0.826) = \$6.11 \text{ per share}$$

Example 2

Which of the following derivative instruments are characterised by a standard contract size?

- (1) Futures contract
 - (2) Exchange-traded option
 - (3) Forward rate agreement
 - (4) Swap
- A 1 and 2
B 2 and 3
C 3 and 4
D 1 and 4

This question addresses parts G3c and G4b of the Syllabus and Study Guide. The correct response is as follows:

A 1 and 2

Derivative hedging instruments that are traded on an exchange or market are standardised in nature. Futures contracts, whether interest rate futures or currency futures, relate to a standard quantity of an underlying asset. Exchange-traded options, by definition, are traded on an exchange and are therefore standardised in nature, whether interest rate options or currency options.

Forward rate agreement

A forward rate agreement (FRA) is the interest rate equivalent of a forward exchange contract (FEC). It is an agreement between a bank and a customer to fix an interest rate on an agreed amount of funds for an agreed future period. The FRA is tailored to the customer's needs and so is a bespoke contract rather than a standardised contract.

Answers B and C were therefore not correct,

Swap

Both currency swaps and interest rate swaps are derivatives that are available to organisations to manage or hedge long-term foreign currency risk and interest rate risk. They are essentially an agreement between two counterparties to exchange interest rate obligations on an agreed amount of funds, whether in the domestic currency or in a foreign currency. A bank will usually act as an intermediary in arranging a swap in exchange for a fee and can even arrange a swap where no counterparty is immediately available. Swaps are therefore tailored to customers' needs and are not standardised in nature.

Answers C and D were therefore not correct.

Section B

In general, candidates performed reasonably well on calculation-based questions, for example 1a, 4a and 5a, but on average less well on discussion-based questions, for example 1b, 2b and 4b. Most candidates answered all five questions in Section B.

It is good exam technique to read the question carefully in order to have a clear understanding of what is required. Candidates who do not do this include irrelevant material in their answers to discussion questions. For example, some candidates wasted valuable time in the exam discussing foreign currency risk when the requirement was to discuss interest rate risk.

Question 1

This question was from the investment appraisal part of the syllabus. Many candidates did well on part (a), while answers to part (b) were somewhat variable in terms of both relevance and quality.

Question 1a required candidates to calculate the nominal after-tax NPV of an investment project and comment upon its financial acceptability.

The question presented financial information in a pro forma that many candidates adopted in their answers, helping them to avoid mistakes. The financial information included a terminal value. Some candidates treated the terminal value as taxable, however capital amounts are not liable to corporation tax. Some candidates, without explanation, did not include the terminal value in their answers.

Investment appraisal calculations must be sure of the timing of tax-allowable depreciation (TAD) and tax cash flows. The question said corporation tax was payable one year in arrears and so tax liabilities and TAD benefits had to be lagged by one year. Some answers lagged the tax liabilities, but not the TAD benefits, while some answers lagged neither cash flow. Although the question required candidates to use straight-line TAD, some answers used reducing balance TAD instead. Timing errors can easily be avoided if the requirements of the question are followed. Some candidates did not include a fifth year in their NPV calculation and a result did not take account of year 5 tax-related cash flows.

A nominal terms NPV calculation requires nominal cash flows to be discounted by a nominal discount rate and a nominal after-tax discount rate was provided in the question. There was no need, therefore, to calculate a nominal cost of capital.

Question 1b asked for a discussion of how investment in working capital could be incorporated into investment appraisal which allows for both inflation and taxation. It was therefore a question that asked about working capital cash flows in the context of investment appraisal. Better answers discussed initial investment, incremental investment and recovery of working capital, and pointed out that working capital changes had no taxation effects. It was surprising to see some candidates discussing inflation and taxation when the question asked for a discussion of working capital. It was also surprising to see some candidates discussing working capital financing strategies or working capital objectives.

Question 2

This question was from the risk management part of the syllabus. A number of candidates left this question until last, perhaps leaving insufficient time for preparing an adequate answer, and perhaps also indicating that they were lacking in preparation in relation to this part of the syllabus. This suggestion is supported by those answers that discussed foreign currency risk in part b, which asked for a discussion of interest rate risk. Most answers tended to gain higher marks on 2a compared to 2b.

Question 2a required candidates to evaluate the risk faced by a company which had a foreign currency-denominated fixed interest payment to make in six months' time and to advise how this risk might be hedged. Answers that did not evaluate the risk faced by the company could not receive full marks as that part of the question requirement had not been met.

The exchange rates provided in the question indicated an expected depreciation of the dollar, the home currency, against the peso, the foreign currency. The company therefore faced the risk that its peso fixed interest payment would cost more in dollars in six months' time than at present. The best indication of the likely increase in cost could be found by comparing the dollar value of the interest payment using the spot exchange rate and the six-month forward exchange rate, on an offer basis (the company had to buy pesos). Better answers indicated an understanding of the risk faced by the company arising from a depreciation of its home currency, the dollar.

The information provided in the question suggested a forward exchange contract or a money market hedge as possible hedging methods and many answers evaluated these. A lead payment was also a possibility that could be evaluated, as some candidates demonstrated.

Credit was also given to suggestions that the risk faced by the company might be hedged using derivatives such as currency futures or currency options.

Question 2b asked candidates to identify and discuss the different kinds of interest rate risk faced by the company and the question provide details of four different kinds of debt that it had.

Some answers received no credit because they discussed exchange rate risk, for example they discussed transaction risk, translation risk and economic risk.

The main interest rate risk faced by the company related to fixed rate and variable rate debt. The expectation was for interest rates to fall over the next year and the company would benefit quickly from this via its overdraft. Interest on its variable rate bank loan, however, was reset annually and so the benefit here would be slower in arriving. As for its fixed rate dollar loan notes, the problem here was that the company would be locked into its fixed rate for a further eight years and the company would therefore be at a commercial disadvantage as interest rates fell. It is worth noting that interest on this debt was lower than on the three other kinds of debt. Many candidates were able to say something about fixed rate and variable rate debt.

Question 3

This question was from the business valuations part of the syllabus. Answers to 3a were very variable in quality, while answers to 3b sometimes needed more academic content.

Question 3a asked candidates to calculate the market value of a convertible loan note under two different share price growth rate assumptions. The market value of the loan note is equal to the

sum of the present values of the future cash flows accruing to it. If redeemed, the market value of the loan note is equal to the sum of the present value of the interest payments over eight years, plus the present value of the redemption value after eight years. This would be the 'floor value' of the loan note. If converted, the market value of the loan note is equal to the sum of the present value of the interest payments over seven years, plus the present value of the conversion value after seven years.

A decision about whether conversion was likely was therefore needed in order to determine the relevant cash flows to discount to provide the market value. A key step in this valuation was calculating the conversion value of the loan notes. Many candidates were able to make progress towards calculating one or more conversion values. Errors encountered here were applying only one year of share price growth rather than seven years, and applying eight years of share price growth when conversion was after seven years.

A common error when deciding whether conversion was likely was to compare a conversion value with the loan note nominal value. As these values existed at different points in time, they could not be compared directly. One approach was to compare the conversion value with the expected market value of the loan note at the end of seven years, assuming redemption, as in the suggested solution.

A general point in relation to calculating market values of the loan note is that a number of students did not calculate the interest payment by multiplying the interest rate by the nominal value of the loan.

Question 3b required candidates to discuss the limitations of the dividend growth model as a way of valuing the ordinary shares of a company. Many students were able to make one or two points relating to assumptions made by the model, for example about constant future dividend growth or about a constant cost of equity.

Question 4

This longer-form question was from the business finance part of the syllabus. Many candidates gained high marks on 4a, while doing less well on the 4b and 4c.

Question 4a asked candidates to calculate the after-tax weighted average cost of capital (WACC) of a company on a market value basis. The company had four sources of finance.

Most candidates were able to calculate correctly the cost of equity using the dividend growth model. The question gave all the information needed and no subsidiary calculations were needed.

Most candidates were able to calculate correctly the cost of capital of the irredeemable preference shares, although some candidates mistakenly calculated the cost of capital on an after-tax basis. Although irredeemable preference shares are included with debt as prior charge capital, they pay a dividend, not interest, and so are not tax-efficient.

Many candidates were able to calculate correctly the after-tax cost of debt of the redeemable loan notes using linear interpolation, based on sensible cost of debt estimates, although some candidates had difficulty laying out the interpolation calculation.

Many candidates correctly used the after-tax interest cost of the bank loan as an approximation for its after-tax cost of debt. As the bank loan was a non-current liability, it could not be ignored in calculating the WACC, although some candidates did this.

Candidates were required to use market value when calculating WACC and many were able to calculate these. Some candidates incorrectly included the value of reserves when calculating the market value of equity.

The majority of candidates were able to make a reasonable attempt at a WACC calculation, although some candidates, having laid out the calculation, did not calculate the WACC.

Question 4b required candidates to discuss the connection between the relative costs of sources of finance and the creditor hierarchy. Some candidates incorrectly discussed pecking order theory instead of the creditor hierarchy.

The creditor hierarchy refers to the order in which financial claims are settled when a company goes into liquidation. Some candidates discussed the relative costs of different sources of finance but did not explain the creditor hierarchy or discuss any connection with it.

Question 4c asked candidates to explain the differences between Islamic finance and other conventional finance. Better answers referred to the sharing of risk and reward, the forbidding of riba and only supporting business activities that are acceptable under Sharia law. Weaker answers offered a list of various forms of Islamic finance, without explaining any differences compared to other conventional finance.

Question 5

This longer-form question was from the working capital management part of the syllabus. Many candidates gained reasonable or good marks on 5a, while not doing as well on 5b.

Question 5a required candidates to calculate the annual interest payable on the short-term and long-term debt needed to meet a company's working capital plans. Candidates had to forecast current assets, current liabilities and net working capital.

Although the question said to assume that there were 360 days in one year, some candidates used 365 days, emphasising once again the need to read the question carefully. One common error was omitting the labour current liability. While most candidates were able to calculate trade receivables correctly, more mistakes were made when calculating trade payables. Some students had difficulty calculating materials inventory, work in progress inventory and finished goods inventory, indicating a need for better understanding of working capital ratios.

Question 5b asked candidates to discuss the reasons why a company might experience cash flow problems. The commonly quoted reasons for experiencing cash flow problems are making losses, inflation, significant items of expenditure, growth in business activities and seasonality of business operations, and these are discussed in the suggested answer. Credit was given to sensible points made by candidates.