Financial Management (FM) March/June 2022 Examiner's report

The examining team share their observations from the marking process to highlight strengths and weaknesses in candidates' performance, and to offer constructive advice for those sitting the exam in the future.

Contents

General comments

This examiner's report should be used in conjunction with the published March/June 2022 sample exam which can be found on the [ACCA Practice Platform](#).

In this report, the examining team provide constructive guidance on how to answer the questions whilst sharing their observations from the marking process, highlighting the strengths and weaknesses of candidates who attempted these questions. Future candidates can use this examiner's report as part of their exam preparation, attempting question practice on the [ACCA Practice Platform](#), reviewing the published answers alongside this report.

The Financial Management (FM) exam is offered as a computer-based exam (CBE). The model of delivery for the CBE exam means that candidates do not all receive the same set of questions. In this report, the examining team offer detailed debriefs of selected questions from each section of the exam.

- Section A objective test questions – we focus on four specific questions that caused difficulty in the March 2022 and June 2022 sittings of the exam.
- Section B objective test case questions – here we look at one case from section B in detail.
- Section C constructed response questions – here we provide commentary on two questions, providing guidance on answering these questions and where exam technique could be improved, including the use of the CBE functionality in answering these questions.

Section A

In this section we will look at **FOUR** Section A questions which proved to be particularly difficult for candidates.

Example 1

Tryde Co is a listed company which has 800 million ordinary shares in issue.

Yesterday the ordinary share price closed at $6.00. Two days earlier, the board of directors approved the launch of two new innovative products, but this has not been publicly announced.

Product A has an NPV of $40m. The decision to launch product A will be announced publicly tomorrow.

Product B has an NPV of $160m. The decision to launch product B will be announced publicly this morning.

Assume all other things are equal and that the capital markets believe the projected NPVs. Both products will be financed using internally generated funds.

What will the ordinary share price be at the end of today if the capital market is (1) semi-strong form efficient and (2) strong form efficient?

Share prices	Semi-strong form efficient market	Strong form efficient market
$6.00	(1)	(2)
$6.05		
$6.20		
$6.25		

The correct answers are (1) $6.20 and (2) $6.00

In a semi-strong form efficient market the markets value shares based on information relevant to past movements and also published information.

The share price will react to the NPV of Product B today as news is released. The increase will be $160m/800m shares = $0.20 per share, bringing the share price up to $6.20.

In a strong form efficient market the share price reflects historic information, published information and insider information. The share price of $6.00 will already reflect the NPVs of both new products as the decision to launch them was taken two days ago.

Example 2

Which of the following statements about an over-the-counter interest rate option are correct?

(1)   It is an agreement with a financial institution
(2)   It can be traded
(3)   An immediate premium is payable
(4)   It must be exercised

A   1 and 2 only
B   1 and 3
C   3 and 4
D   1, 2 and 4

The correct answer is B.

An over-the-counter option is an agreement with a financial institution and an immediate premium is payable on taking out the option. However, it cannot be traded and it is only exercised if actual interest rates are less favourable.

Example 3

Which FOUR of the following descriptions relate to the main macroeconomic policy objectives?

A   Ensuring minimum amounts of price increases
B   Increasing national income and living standards
C   Ensuring a balanced ratio of imports to exports
D   Maintaining interest rates at minimum levels
E   Balancing government spending with tax receipts
F   Ensuring a stable and fully employed labour force

The correct answers are A, B, C and F.

A, B, C and F are all main macroeconomic policy objectives.

Maintaining interest rates at minimum levels is instead a monetary policy objective and balancing government spending is a fiscal policy objective.

Example 4

Beaver Co has 100 million equity shares in issue and has just reported a profit, after tax, of $55m.

A new issue of 50 million equity shares at an issue price of $1.50 is being considered. All proceeds would be used to redeem a bank loan with an annual cost of 8%.

Beaver Co pays corporation tax at a rate of 20%.

Assume that operating profit (profit before interest and tax) remains constant.

If the equity issue goes ahead and the bank loan is redeemed, what will be the new earnings per share figure?

A $0.399
B $0.367
C $0.598
D $0.388

The correct answer is A.

New earnings (profit after tax) = $55m + ($50m x $1.50 x 0.08 x (1 – 0.2)) = $59.8m

New earnings per share = $59.8m / (100m + 50m) = $0.399

Many candidates did not adjust the earnings figure and instead used $55m to get $0.367 or did not adjust the number of shares to get $0.598. Alternatively if the equity proceeds were

taken to be $50m (rather than $50m x $1.50), students would have got earnings per share of $0.388.

General comments

Candidates should read the question carefully and follow the instructions on how to answer the question. For example if a question asks the candidate to select two correct statements, then marks can only be awarded if two statements have been selected. There is no partial marking, so an answer which only selects one statement will be awarded no marks. A candidate who selects three statements will also receive no marks.

In addition, when answering a number entry question, candidates must ensure they are entering their answer in the correct format as stated in the requirement. If a number is being requested in millions, there will be an 'm' after the number entry box. If a candidate puts a full answer of say 13000000 in the box rather than 13, this will be marked as incorrect.

If there is no format specified, answers may be given as an integer or to one or two decimal places. The exam system is configured to allow any correct answer, under these formats, to be awarded the available marks.

Section B

Section B tests candidates' knowledge on a number of topics in more detail than section A, with three case questions containing five two-mark objective test questions.

Here is an example case question on the topic of working capital management.

Amax Co is a multinational company which has been reviewing its working capital management.

Inventory	Unit price
Component X	$25

Trade payables	$'000
Bard Co	1,000
Colix Co	3,200

Amax Co has received an offer of a discount for bulk purchase from Bard Co, one of its major suppliers. Bard Co has offered a 0.5% discount on orders of 60,000 units or more of Component X. Amax Co currently consumes 240,000 units of Component X each year and places orders of 20,000 units at the end of each month. Holding cost for Component X is $1 per unit per year and ordering costs are $250 per order. Amax Co does not maintain any buffer inventory of Component X.

Colix Co, a major supplier of Component M to Amax Co, has offered a 1% early settlement discount for payment within 30 days. Amax Co currently takes 72 days to settle outstanding invoices with Colix Co.

Amax Co has a cost of short-term finance of 6% through an overdraft and no surplus cash. Assume that there are 360 days in each year.

Amax Co currently has decentralised treasury operations, but is considering implementing a centralised treasury department.

Question 1

Using months as a basis, what is the financial consequence of accepting the bulk purchase discount?

A   Benefit of $8,000 per year
B   Benefit of $12,000 per year
C   Cost of $13,000 per year
D   Cost of $8,000 per year

The correct answer is B.

Saving in ordering cost = 250 x (12 – 4) = $2,000 per year
Increase in holding cost = 1 x [(60,000/2) – (20,000/2)] = $20,000 per year
Purchase price of Component X = $25.00 per unit
Annual saving using discount = 240,000 x 25 x 0.005 = $30,000 per year
Benefit of using discount = 2,000 – 20,000 + 30,000 = $12,000 per year

The most common errors here were to take the saving in ordering cost as a cost instead of a benefit, and get a benefit of $8,000 per year, or to use the order size as the average inventory amount and get a cost of $8,000 per year.

Question 2

Using days as a basis, what is the financial consequence of accepting the early settlement discount?

A   Benefit of $48,000 per year
B   Cost of $32,000 per year
C   Cost of $80,000 per year
D   Benefit of $80,000 per year

The correct answer is A.

Annual purchases of Component M = 3.2m x (360/72) = $16,000,000 per year
Revised trade payables = 16m x 30/360 = $1,333,333
Increase in financing cost = 0.06 x (3,200,000 – 1,333,333) = $112,000 per year
Discount saving = 16m x 0.01 = $160,000 per year
Benefit = 160,000 – 112,000 = $48,000 per year

The most common error here was to use the financing cost of revised trade payables, rather than of the change in trade payables and get a benefit of $80,000 per year.

Question 3

In relation to managing foreign accounts receivable, which of the following statements is correct?

A   Companies expecting to receive foreign currency from foreign accounts receivable will be concerned about the risk of the foreign currency appreciating against the domestic currency

B   The safest way to conduct business with foreign accounts receivable is by making a sale where goods are shipped and delivered before payment is due (open account)

C   There is no need to assess the creditworthiness of foreign customers if a company has export credit insurance for foreign accounts receivable

D   Discounting bills of exchange can reduce foreign accounts receivable default risk

The correct answer is D.

It is correct that discounting bills of exchange can reduce foreign accounts receivable (FAR) default risk since it reduces the level of investment in FAR.

A significant number of candidates selected option A, which is incorrect because companies expecting to receive foreign currency from FAR will be concerned about the risk of the foreign currency depreciating, rather than appreciating, against the domestic currency.

Question 4

In relation to Amax Co's proposed change to treasury management operations, which of the following statements is correct?

A   Local management will be incentivised to maximise profitability
B   Amax Co will be more responsive to localised needs for currency hedging
C   Amax Co will suffer a loss of autonomy at a local level
D   The change should increase the cost of hedging foreign currency risk for Amax Co

The correct answer is C.

It is correct that local autonomy is decreased by centralised treasury management.

Some candidates selected option B, but centralised treasury management would be less responsive, rather than more responsive, to the requirements of local business units. Option D was also a popular choice for candidates, but a centralised treasury department would minimise the number of hedging transactions and therefore reduce the costs of hedging foreign currency risk.

Question 5

In relation to working capital funding strategy, which of the following statements is correct?

A   An aggressive strategy seeks to maximise liquidity at the expense of profitability

B   Short-term finance has a higher cost than long-term finance

C   Fluctuating current assets should be financed from a short-term source

D   A moderate or matching strategy finances current assets from a short-term source

The correct answer is C.

It is correct, under the matching principle, to say that fluctuating current assets should be financed from a short-term source.

Some candidates selected option D, but it is not correct to say that a moderate or matching strategy finances current assets from a short-term source, since the matching principle would require that permanent current assets be financed from a long-term source.

Section C

In this section we will look in detail at TWO constructed response questions from different syllabus areas. The full questions and solutions have been published and are available on the [ACCA Practice Platform](#).

Question 1 – Melplash Co

Melplash is from the Investment Appraisal area of the syllabus (syllabus area D), specifically section 1, with the following learning outcomes being tested in the corresponding part-question:

- Identify and calculate relevant cash flows for investment projects (a) (i)

- Calculate payback period and discuss its usefulness as an investment appraisal method (a) (iii) and (b)

- Calculate return on capital employed (accounting rate of return) and discuss its usefulness as an investment appraisal method (a) (iv) and (b)

- Calculate net present value and discuss its usefulness as an investment appraisal method (a) (i) and (b)

- Calculate internal rate of return and discuss its usefulness as an investment appraisal method (a) (ii) and (b)

The question scenario is structured in a similar way to other investment appraisal questions in that the company's operations and proposed investment are set out. This is then followed by the required targets for payback period and return on capital employed (ROCE). The scenario is completed with the detailed financial information, together with the proposed scale of the operation in terms of units (motorcycles produced and sold).

Where the question differs to other published questions in this syllabus area (for example Hawker Co, September/December 2021) is that part-question (a) is broken down into smaller, more specific requirements covering the four investment appraisal

techniques stated above. This enables candidates to clearly see the marks available for each part of the question, and therefore organise their responses accordingly. It is also the order in which the specific requirements should be addressed.

Part (b) requires a discursive response on the suitability of the investment appraisal techniques used in part (a) and advice as to whether the proposed investment is financially acceptable. This part-question is worth 9 marks and it is expected that candidates spend the appropriate amount of time on a discussion-type response such as this, covering all four of the techniques in sufficient depth, together with the required advice. The suggested solution gives a good indication as to the level of depth needed for a requirement with this amount of marks.

The approach to this question does not differ from any other 20-mark question. Read the requirements firstly to try to identify the syllabus area that is being tested, and then have these in mind whilst reading the scenario. From requirement (a), it is evident that the numerical information provided is absolutely central to the response required and therefore should be read carefully, making note of key points such as the fact that the selling price, variable costs and incremental fixed costs are stated in <u>year 1 price terms</u>.

For part (b), planning your response is recommended, such as setting out four sub-headings covering each of the four techniques featured in part (a), supplemented with a final sub-heading for the 'advice' as a conclusion. Given that the <u>suitability</u> of each technique needs to be discussed, it is expected that candidates would look at both sides of suitability i.e. what makes the technique suitable, but also why might it not be suitable. This will facilitate the requirement for a discussion e.g. *"Payback period is a suitable technique because………On the other hand, payback period may not be suitable because……"*

As has been mentioned in previous Examiner's Reports, discussion type part-questions should be written in continuous prose using the Financial Management language appropriate to a professional examination at this Applied Skills level. Short bullet points of just a few words do not comprise a discussion and responses wholly like this will gain few, if any, marks.

This report will discuss the best way to tackle each requirement in turn, highlighting common mistakes and demonstrating ways to score more marks.

How to perform well in this question

Requirement (a)(i) – 5 marks

> **(a) For the proposed investment in the new motorcycle, calculate the following:**
>
> **(i) Net present value;**
>
> (5 marks)

The requirement necessitates the production of a cash flow forecast over the four-year life of the project, with net cash flow from each year discounted at the stated nominal (money) discount rate in order to get the net present value of the project. A well-prepared candidate should have few difficulties in executing this task and many candidates scored full marks here.

As stated above, the selling price and variable costs per motorcycle, together with the incremental fixed costs, are all stated in year 1 price terms and therefore it is incorrect to apply the expected inflation to the year 1 figures. This was the most common error on this question.

Other errors, although far less frequent than the above, included:

- Failure to compound the inflation e.g., the year 3 selling price needs to be the year 1 selling price inflated by two years' worth of 6% per year inflation, $20,000 * 1.06^2 = $20,000 * 1.1236 = $22,472. Sometimes errors occur because of careless use of spreadsheet functionality in that the 6% per year inflation figure is applied to the year 1 figure in both year 3 and year 4, instead of applying the inflation figure to the prior year e.g., the year 3 selling price should be 6% higher than the year 2 selling price;

- Inclusion of the initial investment in year 1;

- Omission of the residual value;

- Careless use of the sum formula such that the whole column of figures for a year were added, which caused the contribution to be double counted;

- Errors of magnitude such as income and variable costs being shown in $ or $000 but fixed costs shown incorrectly as $m.

The questions, Pinks Co (March/June 2019) and Crocket Co (September/December 2020) contain examples of how to correctly apply inflation to cash flows.

In more general terms, candidates always need to show all workings, which can be shown in a separate workings' area or within cells or a combination of both. It is not acceptable for a cell to simply contain a typed-in number with no supporting workings. If the figure is incorrect, then it is impossible to award method marks in cases like this.

Finally, work should be presented as it would in the professional work environment. Rows and columns should be labelled correctly, with the magnitude of the figures

clearly stated. The suggested solution uses $m, but $000 is perfectly acceptable providing that the magnitude is used consistently.

Requirement (a)(ii) – 2 marks

(a) For the proposed investment in the new motorcycle, calculate the following:

(ii) Internal rate of return;

(2 marks)

There are two acceptable approaches to the calculation of the internal rate of return (IRR).

Firstly, as per the suggested solution, IRR can be calculated via the interpolation method, where the approach is as follows:

- Calculate a 2nd NPV at a higher, nominal (money) discount rate. This is based upon candidates computing a positive NPV at the nominal discount rate of 14% in part (a)(i). If a negative NPV was calculated at 14%, then a lower nominal discount rate should be chosen for the 2nd NPV.

- Use the IRR formula, from the formulae sheet, to find the % return, which should be expressed as a % and not a decimal e.g. 17.82% and not 0.1782.

Some candidates calculated two new NPVs at nominal discount rates other than 14%. This is unnecessary and wastes valuable time. The NPV at 14% in (a)(i) can be used in conjunction with one other NPV at a different rate, as noted above.

Whilst this calculation was generally done well, some candidates made careless mistakes such as errors of arithmetic in the IRR formula or calculating incorrectly the 2nd NPV by using present values (PVs) at 14% rather than the net cash flow figures.

Candidates should perform a reasonableness test on their IRR %. If the NPV is positive at 14%, but NPV is negative at 20%, then the IRR must be between 14% and 20%. IRR %s outside of the 14-20% range must have been computed incorrectly in this instance.

Secondly, IRR can be calculated using spreadsheet functionality. This is the quickest and most efficient way of performing this task. Typing "=IRR" and then selecting the row of net cash flow figures, placed inside brackets, returns the IRR for that series of cash flows.

Care must be taken, however, to select the correct figures. Some candidates incorrectly used the PVs instead of the net cash flow figures and hence scored zero marks here. If candidates plan on using this method in future, it is advisable to practice the technique in advance of the actual examination.

Requirement (a)(iii) – 1 mark

> **(a) For the proposed investment in the new motorcycle, calculate the following:**
>
> **(iii) Payback period;**
>
> (1 mark)

One mark was available for calculating the payback period for the proposed investment in the new motorcycle, and in general this was done well by candidates.

It is expected that candidates will assume even annual cash flows for the purpose of calculating the payback period and therefore the mark was not awarded where an 'end-of-year' annual cash flow was assumed, yielding an incorrect answer of 3 years.

Payback occurs during the 3rd year and hence the solution is 2 years and the proportion of the 3rd year needed for the initial investment to be repaid. It is acceptable to express the required fraction of the year in months or as a decimal.

Aside from careless arithmetic errors, the most common mistake in this part-question was to use the present value of the cash flows and not the net cash flow figures themselves. Such responses were therefore calculating the discounted payback period, maybe unwittingly, and could not gain the one mark on offer.

Requirement (a)(iv) – 3 marks

> **(a) For the proposed investment in the new motorcycle, calculate the following:**
>
> **(iv) Return on capital employed (accounting rate of return) based on average investment ;**
>
> (3 marks)

The calculation of the return on capital employed (ROCE) posed more problems to candidates than the earlier requirements.

Successful calculation of the ROCE firstly requires two correct workings:

- Average accounting profit (for the numerator)

- Average investment (for the denominator)

To calculate the average accounting profit, it is necessary to identify the operational cash flows arising from the investment, which do not include the capital items of initial investment and residual value.

e.g. all $m   Year 1   30.00

                Year 2   154.20

Year 3 124.48

Year 4 (16.80)*

*(13.2 - 30)

Total cash inflow = $291.88m

Then, to move from total cash inflow to total accounting profit it is necessary to deduct depreciation of $190m ($220m-$30m).

Total accounting profit = $291.88m - $190m = $101.88m.

Finally, we can average this figure over the four-year project period

Average accounting profit = $101.88m / 4 years = $25.47m.

Understanding the difference between cash flow and accounting profit is fundamental knowledge, which was lacking in many responses which made no attempt to deduct deprecation. The second most common error was to include the $30m of residual value as part of the project profit.

The calculation of the denominator requires the average investment to be found. This is clearly in the requirement *"…based on average investment"*.

Therefore, the initial investment of $220m and the residual value of $30m need to be averaged

e.g. (($220m + $30m) / 2)

  = $250m / 2

  = $125m

This was generally done well by candidates. Any errors that arose were usually either errors of order of arithmetic function or simply not including the residual value of $30m.

Once the numerator and the denominator are computed, candidates were then expected to calculate the ROCE % by dividing the average accounting profit by the average investment

e.g. $25.47m / $125m x 100%

  = 20.4%

The answer should be expressed as a % and not a decimal i.e. 0.204 is not the ROCE %

Requirement (b) – 9 marks

(b) Discuss the suitability of the techniques used in (a) for determining whether to undertake an investment and advise whether Melplash Co's proposed investment is financially acceptable

(9 marks)

This part of the question requires candidates to discuss the suitability of the four investment appraisal techniques used in part (a). As mentioned above, it is worth spending a minute or two to consider and plan your response, even allowing for examination time pressure.

There are two parts to the requirement, the second of which is to advise whether the proposed investment is financially acceptable. Study of previously published questions and Examiner's reports will show that such advice is worth 1 mark and it is a simple, unequivocal, decision based upon NPV.

The first part of the requirement therefore can be assumed, through deduction, to be worth eight marks, and with the suitability of each of the four techniques needing to be discussed, it can be worked out relatively quickly that a good quality discussion of each technique can yield two marks per technique.

For each technique, a good quality discussion about its suitability could be achieved in different ways.

One approach would be to consider a positive feature of a technique but also to balance this with a negative feature. For example, as per the suggested solution;

"Payback has the advantage of using cash flows. It indicates when the investment will breakeven and whether this is before projected cash flows become very uncertain.

However, payback ignores the cash flows after the payback period, which for years 3-4 here are a significant proportion of total cash flows."

An acceptable, alternative approach would be to supplement one positive feature with another. Once again, as per the suggested solution;

"NPV uses cash flows rather than subjective profits. It takes into account the time value of money and the whole investment life. It is an absolute measure" and *"it indicates the effect on shareholder wealth."*

The suggested solution illustrates this way of addressing IRR and ROCE also.

As noted earlier, planning your response by setting out each technique as a sub-heading would help candidates to address all required elements, and displays a logical approach. A sub-heading for the advice would be a good way to begin a conclusion to the response.

The advice on financial acceptability should be based upon NPV only e.g. the project has a positive NPV and therefore should be accepted. This advice should not be compromised by using the other techniques for the advice on financial acceptability.

In general, this part-question was answered very well by candidates, with many scoring high marks.

Where candidates did not score high marks, the following was observed:

- Too much focus on a discussion of the results calculated in part (a) rather than the suitability of the techniques

- A scattergun, short bullet point approach trying to cover too much too quickly. This approach rarely scores many, if any, marks and is to be avoided as the part (b) requirement states "Discuss….", meaning that a discussion is required

- The advice was not clear. Instead of being based solely on NPV, some hedging of the advice took place where all four investment techniques were discussed, with no clear conclusion .

The key messages from this question overall are:
- Read the requirements carefully
- Look at the marks available for each requirement
- "Discuss" type questions require more than brief points
- Practice published questions and other questions in the materials published by ACCA's Approved Content Providers.

Question 2 – Tanza Co

The question is from the syllabus area E, Business Finance. The question is divided into two parts: numerical and critical discussion. When reading this report, it is advisable to go through the question and answer.

Requirement (a) – 10 marks

(a) Calculate the after-tax weighted average cost of capital for Tanza Co, at 31 December 20X6, on a market value basis.

(10 marks)

The first part required calculating the after-tax weighted average cost of capital (WACC). This is an important area of financing decisions (Syllabus section E2: estimating the cost of capital) and requires the consideration of the influence of capital structure on the average cost of capital. The capital structure refers to the mix of equity and debt finance for funding the company. It is essential to prepare well and be competent in calculating the cost of each source of finance and the average WACC for the company. The question setup was straightforward that the capital structure of Tanza Co was made up of three different sources of finance: ordinary shares, convertible loan notes and bank loans. Therefore, this will require three separate calculations due to the three different funding sources.

First, the cost of equity – the question scenario and information given will dictate whether to use the dividend growth model or the capital asset pricing model (CAPM) to calculate the cost of equity.

Tanza Co had information on the market price of the share ($5.55), the most recent dividend per share paid ($0.85), the future dividend per share ($0.90) and the growth rate of 6%. There was no information on the risk-free rate of return, the beta value of Tanza Co and the return from the market. This suggests that the only method to calculate the cost of equity was to use the dividend growth model. In previous diets, the dividend growth rate may have needed to be calculated. The formulae sheet for the Financial Management exam gives the following formulae

$P_0 = D_0 * (1+g)/(r_e-g)$

or rearranging the formula to give

$r_e = (D_0 * (1+g)/P_o) + g$

D_0 is the current dividend just paid/to be paid

g is the dividend growth rate

r_e is the cost of equity

$D_0 * (1+g)$ is the dividend to be paid in the future.

For Tanza Co, you have two choices: first, calculate the $D_0 * (1+g) = \$0.85 * (1+6\%) = \$0.90$ or second, use the amount given as $0.90, which will be paid in one year's time on 31 December 20X7. However, it was noted that the former method complicated the cost of equity calculation by not using the D_1 value provided. Additionally, the following errors were noted, and candidates did not receive the relevant mark available:

- total dividend in the numerator but share price in the denominator or vice versa
- not using the future dividend in the DGM calculation
- subtracting rather than adding the growth rate when calculating the cost of equity.

The cost of equity using the dividend growth model:

1. $r_e = (0.90/5.55) + 6\% = 22.22\%$

Calculation of the dividend expected in one year's time:					
D0 * (1+g)	=	(0.85*(1+6%)			
	=	$0.90			
re = (D_0 * (1+g)/Po) + g					
input the numbers in the above formula for cost of equity					
re	=	(0.90/ 5.55)+6%			
	=	22.22%			

Second, calculate the cost of the convertible loan notes:

Convertible loan notes are more complex than redeemable loan notes to calculate; however, practising will make it easier.

There are three steps to the calculation: conversion value, after-tax interest, and the internal rate of return (IRR).

The 6% convertible loan notes are convertible on the redemption date of 31 December 20X9, i.e., 3 years from now at the nominal value of $100 or 20 ordinary shares per loan note at a growth rate of 6%. The question to ask is whether the conversion is likely to take place. If the conversion is not going to take place, we disregard the conversion value and treat the loan note as redeemable debt.

Value of the convertible loan notes:

First, calculate the value of each share in 3 years:
The information from the question required is as follows:
market value now = $5.55, growth rate = 6%, redemption date = 3 years.
The value of each share in 3 years' time is given as MV x $(1+g\%)^n$ =
$5.55*(1+6\%)^3$ = $6.61.
This is now used to convert for 20 shares = $6.61*20 shares = $132.20.

At this point, a decision has to be made whether to redeem using the nominal value of $100 or the conversion value of $132.20. It is obvious from the two values that the lender will opt for the conversion value as this is higher. Candidates must provide this decision and not just use the conversion value of $132.20 in the IRR calculation.

	A	B	C	D	E	F	G
1	Value of the convertible loan notes						
2							
3	The current market value of the share is					5.55	$
4	Using a growth rate of					6%	
5	The value of each share in 3 years time:				=	MV x (1+g%)^3	
6					=	5.55*(1+6%)^3	
7					=	F3*(1+F4)^3	
8					=	6.61	$
9	Now we need to convert them to the value of the 20 shares						
10		20 shares x$6.61			=	20*F8	
11					=	132.20	$
12							

Second, calculate **the post-tax interest**.

This is given by interest x (1 − tax rate) = 6%*100*(1-0.15) = 5.1%

Third, calculate the **cost of the convertible debt**, similar to that of a redeemable debt. You can use the spreadsheet function to calculate the IRR or the more extended version. If using the spreadsheet function, ensure you are comfortable with how it works, as cash flows are commonly laid out wrongly for the function to be correctly applied. The detailed answer guide shows the workings but has been reproduced for your convenience. We discount at two rates (10% and 12% here) to calculate IRR and use the linear interpolation formula.

$$IRR = A + \frac{NPVa}{NPVa - NPVb} * (B - A)$$

A = lower discount rate

B = higher discount rate

NPVa = NPV at the lower discount rate A

NPVb = NPV at the higher discount rate B

The IRR estimation is more accurate when there is a negative and a positive NPV. However, under exam conditions, insert your values (either both are positive, or both are negative) into the formula and complete the calculation as no marks will be lost.

However, candidates can deal with two positive numbers to get the correct IRR but often struggle when the two NPVs are negative. Errors are made, swapping the A for B discount rates, unable to recognise the range between the two NPVs and basic calculation errors.

$$IRR = 10 + \frac{3.456}{3.456 - (-2.133)} * (12 - 10)$$

2. IRR = 11.24%

	A	B	C	D	E	F	G
1		Year	Cash Flows, $	DF/annuity at 10% - use the tables given	Present values	DF/annuity at 12% - use the tables given	Present values
2							
3	Market value, now	0	-108.51	1	-108.510	1	-108.510
4	Post-tax interest	1 to 3	5.1	2.487	12.684	2.402	12.250
5	Higher conversion value	3	132.2	0.751	99.282	0.712	94.126
6							
7				NPV	3.456		-2.133
8							
9							
10	IRR =	$10 + \dfrac{3.456}{3.456 - (-2.133)} * (12 - 10)$					
11							
12							
13		11.24 %					
14							

Candidates should practice similar examples and avoid the following errors:
- calculating the cost of debt from perpetuity instead of using an IRR calculation
- ignoring tax in calculating the cost of convertible debt and cost of bank loans
- using the after-tax interest payment as the cost of debt in the WACC, thereby ignoring the need to calculate the cost of capital of the convertible loan and losing substantial marks
- mixing per loan note interest payments with total market value and redemption value in an interpolation calculation

- arithmetic errors in the linear interpolation of the IRR, using two negative NPVs caused more problems in calculating IRR.
- making errors when using the spreadsheet IRR function, e.g. outflows used as inflows.

Finally, do not forget to calculate the post-tax cost of the bank loan. In Tanza Co, the cost of the bank loan calculation is:

3. 4%*(1-0.15) = 3.4%

The next stage is to calculate the market value of the capital structure. Some candidates used book values and lost marks, despite the question requiring the use of market values. Candidates should recognise that the cost of each source of finance will be reflected by the risk faced by the supplier of the finance. For example, the ordinary shares or equity finance will represent the highest level of risk faced by the investors and, therefore, the highest rate of return, followed by the convertible loan notes and finally the bank loan.

Now we have all the costs of the company's separate sources of finance, and we are ready to calculate WACC. But before doing this, we need the market values and their weightings. Candidates should recognise that a bank loan's market value is its book value as this is not tradeable, unlike ordinary shares and the convertible loan note.

Finance source	$ million
Ordinary shares	(50 million/0.5) * $5.55 = 555
Convertible loan note	108.51/100 * 150million = 162.8
Bank loan	120
Total	837.8

Calculation of WACC:

Many candidates ignored the bank loan or used the cost of convertible debt for the cost of a bank loan. A general rule is that if a finance source is used for the long term, it should be included in the WACC calculation. The question clearly says that "the capital structure has not changed for many years". There were arithmetic errors in calculating WACC, for example, calculating a WACC higher than the highest cost

of capital. Candidates should instinctively recognise whether their figure is appropriate or not.

WACC = ((22.2%*555/837.8)+(11.24%*162.8/837.8)+(3.4%*120/837.8) =17.4%

In summary:

1. Calculate the costs of individual sources of finance: Ordinary shares, convertible loan note, and bank loan.
2. Calculate the market values of each source of finance.
3. Calculate the WACC using market values

Requirement (b)(i) – 6 marks

(b)(i) Critically discuss, with reference to the relevant theory, the views of Director A and Director B on raising new finance.

(6 marks)

It was evident here that reference needed to be made to the directors' views and that the six marks would be shared equally between each director's views.

Good responses took each director's view, matched them to the appropriate theory, and then brought in some critical elements to the discussion by referencing each theory's assumptions and limitations. However, many candidates need to ensure they are prepared for both the numerical requirements and the discursive elements, as in this question, each part had equal marks.

Candidates need to read the requirements and address them directly. If a critical discussion is asked for, one would then discuss the limitations and/or disadvantages of a theory or concept to achieve full marks. Furthermore, where specific reference to the case scenario is made as in (b) (i) and (ii), then full marks cannot be gained with theory alone – the company circumstances must be used in a relevant and applied way.

Requirement (b)(ii) – 4 marks

(b)(ii) Discuss TWO other factors for Tanza Co to consider in making the decision to raise debt finance or equity finance.

(4 marks)

Two factors were required here for four marks, i.e. a discussion of each factor sufficient to gain two marks. Furthermore, two other factors were required separate to those already discussed.

Given that the question had already focused on the WACC and the relative costs of debt and equity, these did not count as other factors. Instead, candidates could have selected from the following: speed of financial need, availability of finance, security, debt capacity, flexibility, cost of issuing new shares/debt, and effect on existing shareholders. This was unsatisfactorily done, and many did not refer to the scenario set.

General comments

While there were many reasonable attempts at most parts of the questions, in Section C, specifically numerical parts, there were some candidates whose discursive responses exhibited insufficient knowledge of Financial Management. It should be emphasised that question requirements must be read carefully and answered directly and fully to give candidates the best chance of passing the exam.

Links to technical articles helpful in understanding the financing decisions: for both numerical and discursive parts:

Optimum Capital Structure

Cost of Capital Gearing and CAPM