ACT PRACTICE PAPER 2

Advanced Diploma in Treasury Management

ACT Level 7

Practice paper for the Advanced Diploma in Treasury Management (FCT) based on the 2020 syllabus.

INTRODUCTION

This practice paper has been produced by the Awarding Body at the Association of Corporate Treasurers (ACT) to assist students in their preparation for the Advanced Diploma in Treasury Management (FCT) assessment.

Students will have 30 minutes reading time at the start and then will have three hours and 30 minutes to complete the exam. They should then review their performance to identify areas of weakness on which to concentrate the remainder of their study time. Although the practice paper in this guide is typical of an assessment, it should be noted that it is not possible to test every single aspect of the syllabus in any one particular exam.

To prepare properly for the exam, candidates should make full use of the tuition options where available and read as widely as possible to ensure that the whole syllabus has been covered.

ASSESSMENT TECHNIQUE

This is a professional paper and application to practice should be at 'strategic' level.

The best way to approach written exams is to work methodically through the questions. Candidates should not spend too much time on any one question if you are struggling to think of an adequate answer. Remember you can flag any question to come back to later should you want to continue your way through the exam.

When all of the questions have been answered, it is prudent to use any remaining time to go through each question again, carefully, to double-check that nothing has been missed. Altering just one response could make the difference between passing and failing.

Please ensure you show your workings within your answer when prompted as there are marks available for the workings. You will be able to make rough workings on a piece of paper during the exam should you wish to, however these will not count towards your final mark.

ASSESSMENT INFORMATION

The exam consists of eight written questions, of which you must answer seven, and will involve a pre-seen case study that will be released two weeks prior to the exam date. The exam paper is split into Sections A and B and is worth a total of 100 marks.

Section	Number of questions	Marks available
Section A	Four case study-based questions (pre-seen)	40
Section B	Four scenario-based questions of which three must be answered	60
Total	7	100

Under exam conditions, three and a half hours (210 minutes) are allowed to complete the exam, plus an additional 30 minutes reading time at the start.

When you take your actual exam, you will be sitting online using your own PC/Laptop. You have access to an online scientific calculator, but you may also use a non-programmable scientific calculator.

Scenarios are fictitious and thus do not reflect current situations, and you will need to respond to the question based on the evidence provided in the case study

In order for you to determine how well you have performed, sample mark schemes are provided after each question. Please note that these are mark schemes only and **not** model answers. They provide lists of points that are expected to be covered within answers, although the content of your answers must be much more detailed (satisfying the command word used in the question, for example 'analyse'). As with all mark schemes, the content is indicative only, i.e. the lists of points featured are not exhaustive. It is highly likely that there are other perspectives and, provided these are valid and supported fully, marks would be awarded for these in a live exam. There are also references to the relevant Learning Outcomes if you need to revisit the associated material.

SECTION A – 40 marks

FOUR long form questions worth a total of 40 marks based on a pre-seen case study. These questions will test knowledge, understanding, analysis, application, insight, evaluation and justification as appropriate to level descriptors. This is a professional paper and application to practice should be at 'strategic' level and, as would therefore be expected, candidates need to be able to synthesise knowledge from different elements of the syllabus rather than be tested on discreet areas.

Background

SolubleNutrition (SN) is a large multinational supplier of beverages. SN has a large product portfolio which includes a range of different beverages. It has operations in many countries including the United Kingdom, Ireland, Turkey, United States, Canada, Brazil, Australia and a number of regions in Africa. It also produces several ready to drink products for a number of markets. SN is a UK listed business.

Strategy

The business has a four point strategy that focuses on:

- efficient growth
- value creation
- motivated people
- capital structure.

Efficient growth: A key focus for the company is growth in organic sales which in the last two years has been 5% and 7% respectively. The business has a good operating margin of 30% and aims to increase this, as part of its strategy. It has done well in generating significant free cashflow which is a metric that is closely monitored. It has invested in supply chain technology and data analytics to help reduce working capital.

Value creation: A key metric is total return to shareholders which includes both dividend income and share price appreciation.

Motivated people: There are metrics on sales per employee which are carefully observed. There is an employee skills empowerment programme where staff receive specialist training and take up is strongly encouraged.

Capital structure: The main objective is to fund with debt but to ensure financial flexibility. The following ratio targets affect this:

- Net debt/EBITDA in range 2.5 – 3x
- Dividend cover of 1.8 – 2.2x

The ratios translate to an A- credit rating.

The business ensures that any surplus cash is invested or returned to shareholders as evidenced by the share buy-back programme this year.

There is also a strong focus on sustainability thus the company monitors its carbon emissions and water usage.

Markets
The table below shows the spread of the business in terms of sales, operating profits and number of employees.

% Share by region	North America	Europe	Africa	Latin America	Asia
Net sales	34.9	22.9	12.4	8.8	21.0
Operating profit	45.8	23.4	6.5	8.6	15.7
Employees	9.7	36.9	15.0	8.8	29.6

Marketing is a significant but essential cost to the business. There has been a recent review of the marketing agencies used by SN and, as a result, the plan is to reduce the number of agencies and focus on working with just the larger ones.

Financials – extract only –does not include all line items

Financial Statements	**Mar-20**
Income Statement	GBPm
Net sales	12,867
Gross profit	8,001
Marketing	**(2,042)**
Other operating expenses	**(1,917)**
Operating profit	4,042
Non-operating items/ JV	456
Finance income	442
Finance expense	(705)
PBT	4,235
Tax	(898)
Profit for year	3,337

Balance Sheet	
Intangibles	12,557
Property, plant & equipment	4,455
Investments in associates & JV	3,173
Receivables	69
Other non-current assets	1,669
Total non-current assets	21,923
Current assets	
Inventories	5,472
Trade receivables	2,694
Cash and cash equivalents	932
Other current assets	275
Total current assets	9,373
Total assets	***31,296***
Current liabilities	
Accounts payable	(4,202)
Short term debt	(1,959)
Other short term liabilities	(842)

Total current liabilities	(7,003)
Non-current liabilities	
Borrowings	(10,956)
Other non-current liabilities	(3,181)
Total non-current liabilities	(14,137)
Total liabilities	(21,140)
Net assets	10,156
Equity	10,156

Cashflows	
Net income	***3,337***
Depreciation	374
Dividends received	168
Change in working capital	(222)
Interest paid	(468)
Interest received	216
Tax paid	(805)
Other items	648
Cash from operations	***3,248***
Net capex	(671)
Sale of business	426
Acquisitions	(56)
Other items	31
Cash from investing opportunities	(270)
Dividends	(1,623)
Share buy back	(2,775)
Proceeds from bonds	2,766
Repayment of bonds	(447)
Purchase of share non control	(784)
Other items	(61)
Cash from financing	(2,924)
Net change in cash	**54**
Cash & cash equivalents	932
Overdrafts	(211)
Net cash	721

Other	
Share price (GBP pence)	3,254
Shares in issue (million)	2,339

The company has a significant amount of intangible assets which represents goodwill and brand value over the years.

Financing

SN has net debt of over GBP11bn after taking into account cash and cash equivalents of over GBP900m. The breakdown of its debt is shown in the tables below by type of debt instrument and a summary of the maturities. SN has issued multiple EUR and USD bonds (the latter of which are SEC registered) with a range of maturities and notional values.

Debt type	Amount GBPm	Number	Maturities
Overdrafts	200		< 1 year
Commercial paper	650		< 1 year
Bank loans	565		1 year
US bonds	6,134	11	max 2043
EUR bonds	4,532	9	max 2027
Finance leases	128		
Total	12,209		
Cash	932		
Net debt	11,277		

Debt maturity analysis	
< 1 year	16%
1 – 3 years	24%
3 - 5 years	23%
> 5 years	38%

Bond buy back

SN has a USD500m fixed-rate bond, maturing in 2028, that it is considering buying back as it is paying 2.8% which is considerably above the present eight years swap rate of 1.8%. It is looking to replace this bond with a floating rate bond with a similar term and amount later in the year.

Risk and compliance management

SN has issued both fixed and floating rate debt, but predominately the latter. The interest rate risk has been hedged with interest rate and cross currency swaps, with 54% being fixed at year end.

As the US is the largest part of the business, this gives rise to significant transactional exposure to the USD. The group policy is to hedge out to 24 months of forecast foreign exchange net exposure. There is a target of 75% cover for the first 12 months. Other currencies are hedged out to 18 months. The group policy is to hedge overseas investments using net investment hedges.

For liquidity, the policy is to limit the amount of borrowing maturing in the year to no more than 50% of gross borrowings less cash equivalents. There are also back-stop facilities in place for the commercial paper programme.

The company is subject to financial credit risk resulting from investments and derivative transactions. The calculation of the exposure uses the net present value of the derivatives to measure against pre-defined limits. Only counterparties with A or higher rating are allowed as investments.

The treasury function is responsible for detailed compliance with Sarbanes Oxley and EMIR reporting. There is a group system that is used to monitor these activities. There is mandatory annual internal training on these that all staff members must complete. Failure to complete these on time, are highlighted and reported to their senior manager. The last internal audit report highlighted two items for improvement in the treasury function. These were concerned with foreign exchange exposure quantification due to insufficient supporting evidence of the exposure from subsidiaries. In addition there were a small number of limit breaches with counterparty exposure due to credit rating downgrades of some of its counterparties. These breaches were rectified within a week of the breach and the size of the breaches was less than ten percent of the limit.

Potential acquisition

The company has a history of mergers and acquisitions, the most recent being an acquisition of an alcohol-free beer business last year.

The company is considering acquiring TeTonic (TT), an AIM (Alternative Investment Market) listed company. This business supplies tonics and has gained a strong market share in the UK. The business has been in operation for ten years. It is hoping to break into the US market. The company has had significant growth in sales and profits over the last five years. Outline financials and assumptions are shown below.

The business has been generating good cashflow and the cash pile has been growing relative in size for its business. However, it also has bank loans where it is paying 4% but receives no interest on its cash holdings.

On turnover/staff metrics, it has achieved very high ratios and this has continued to grow. Staff are paid very well in comparison to industry peers. However, the business is very small in comparison to its sector peers with less than 100 employees. There is a pension scheme which is a defined contribution scheme and the company matches employee contribution up to 15%.

Financials	**GBPm**
Revenue	250
EBIT	81
Cash	45
Depreciation	2
Debt	25

Financial assumptions	%
Tax rate	20
Working capital % revenue	10
Net capex % depreciation	110
Debt /equity ratio	10

Financing costs	% or ratio
Beta	1.3
Kd (cost of debt pre-tax)	4%
Risk free rate	3%
Market return	10%

PE and growth	%
PE ratio	26x
Expected growth (per year) 3 years	12%
Expected growth (per year) after 3 years	8%

SN believes that the acquisition of TT would be a strong addition to its market offering. It also believes that it could improve the return of the business and assist in the expansion of the product into the US and other markets. They are planning on paying GBP1,700m which includes a bid premium over the current market value.

Q1	Critically evaluate the proposed acquisition by SN of TT, including calculating the value of TT based on market metrics and discounted cashflow analysis.	10 marks

Total: 10 marks

Q1 answer

Business valuation

TT can be valued using a variety of methods but the information provided is discounted cashflow and a PE multiple method.

The PE method values the company as
Value = PE x Earnings
Proxy of earnings is operating profit – tax - interest
Earnings = [81 – (25 x 4%)] * (1-20%) = 64
Value = 26 x 64 = GBP1,664 m

The cashflow method assumes growth rate of 12% in the first 3 years and then 8% into perpetuity — 1 mark

Year 0 (base)	Amount GBPm
Profit after tax	64.0
Add back depreciation	2.0
Capex 110% revenue	2.2
Working capital 10%	25.0
Free cashflow	38.8

1 mark

1 mark

Cost of equity using CAPM
Ke = Rf + B(Rm-Rf)
=> 3% + 1.3(10% - 3%) = 12.10%

1 mark

WACC = Ke * %E + Kd * %D
12.10% * (0.9) + 4% * (0.1) = 11.29%

Thus the discount rate is 11.29% is used to discount the cashflows

The terminal value in year 3 is:
FCF / (WACC – g)
57.9/ (11.29% - 8%) = 1760

1 mark

Years	PAT	Depn	Capex	WC	FCF	Terminal value	Present value
Base	64.0	2.0	2.2	25.0	38.8		
1	71.7	2.2	2.5	28.0	43.5		39.0
2	80.3	2.5	2.8	31.4	48.7		39.3
3	89.9	2.8	3.1	35.1	54.5		39.5
Terminal year	100.7	3.1	3.5	39.3	61.1	1855.7	1346.3
Total							1464.2

2 marks

(total 7 marks for calcs)

1 mark

Valuation discussion

The value based on market rates is 1,664m and higher by nearly GBP200m compared to the DCF method. The price SN will need to pay will be the market price and this may rise once this information becomes known in the market.

	The DCF value depends on many assumptions, especially the growth factors and the discount rate. However, the market has valued this business highly but share prices can go down too. SN need to work out how much they are willing to pay in terms of bid premium. This depends on any synergies that can be extracted from the acquisition. **Strategic considerations** The acquisition of TT of 1.7bn is relatively small in scale to SN with a market capitalisation of GBP76bn. An important consideration is that the acquired business is a good strategic fit with the business from a product line and operational viewpoint. TT has a small team that are well rewarded and they will need to be integrated with the SN business with the risk they may move on with their expertise. TT have had strong growth as it is in the early stages of its business. There is a risk that SN might be overpaying for this company. The long term demand for the tonic products need to be assessed and whether they can be rolled out to other international markets. Could TT be a target for a competitor which might result in a bidding war, and the price being pushed upwards? This mark scheme is not exhaustive – all valid points within answers will be awarded marks. Syllabus ref: Unit 1.4.1 (LO 1.4)	1 mark 1 mark
		Total: 10 marks

Q2	(a) Critically assess the rationale for the proposed acquisition of TT and how SN might finance the transaction. (b) Critically discuss the key post-deal strategic issues requiring consideration by SN.	6 marks 4 marks
		Total: 10 marks
Q2 answer	**(a) Acquisition rationale** There are a number of strategic reasons for acquisitions, which often relate to the expected synergy benefits. Entry into the tonic market provides SN with a new product to roll out into its international markets. It also could be a defensive strategy to protect against competitors who may be offering this product in their portfolio. The synergies for this acquisition appear to be market related, by adding a new product range to its already successful portfolio that will integrate well with its product range. Secondly, the target's team have achieved strong growth, market share and brand awareness in the UK and need help in expanding in the US market, which SN has expertise. Other cost synergies are likely to be more limited. SN should be able to reduce the marketing costs and potentially use its expertise in production and distribution to the UK market and US market once the product becomes established. As the cashflow valuation is below the bid value this means there is likely to be a large element of goodwill in the price. TT has a high PE ratio relative to the sector and although it has been a high growth stock, this may not continue at the same rate. There is also concern that breaking into the US market could be more challenging than expected. SN need a clear rationale for the acquisition and need to consider how much to pay and when would be the optimal timing. Are any of its competitors likely to compete if there is a bid? And are the alternatives to a full blown acquisition. Could there be trade relationship set up which would be beneficial to both parties in terms of marketing and expertise in entering new markets. **Funding the acquisition** The options are cash, debt, equity or some combination of them. SN already has a large cash investment portfolio (GBP900m), per year balances, which could mostly be utilised. There is mention of a back stop facility and a commercial paper program (GBP650m outstanding) which all could be used for short term funding, depending on how much headroom there is. Given the size of the organisation it would be expected to have a facility of over GBP3bn and hence this may well be the simplest and most efficient way to fund the acquisition. Issuing longer term debt might be the sensible route as this is likely to be most cost effective. It depends on the debt capacity but given gross debt is already GBP12bn and the number of bonds in issue, suggests that SN have a good reputation and demand for its bonds.	 1 mark 1 mark 1 mark 1 mark 1 mark 1 mark

	It needs to consider its ratio targets of net debt/EBITDA (3x). The ability to issue new debt for this acquisition will depend on the depth of the market, market conditions and investor appetite. Issuing equity has the benefit of not increasing the level of gearing. However, it is an expensive method of raising funds. And the company made it clear that they want to focus on shareholder value and return monies to shareholders by way of share buy-backs. As the target is a listed company, a share swap combined with or without a cash element is also a possibility. The best method is likely to include a mix of existing cash and fresh debt (probably from the RCF in the short term – as an acquisition requires "certain funds") rather than any equity given SN's SVR objectives and the fact that a funding raise is unlikely to result in a credit rating downgrade.	1 mark (up to 6 marks)
	(b) Post-deal strategic issues **Debt** The target has a bank loan (GBP45m) and the terms of this agreement including covenants and takeover clauses should be understood up front. However, this is unlikely to be material. **Pensions** Given the company has only been in existence for 10 years, and has a small team, the size of the pension scheme is unlikely to be material. And recent pension schemes are defined contribution which has much lower risk compared to the older defined benefit schemes. **Competition clearance** TT is in the same sector although its products are not directly competing, but complimenting SN's products such as gin and whisky. And given the relative sizes (76bn v 1.7b) the chance of the competition regulator becoming involved is very low. **Representations and warranties** Representations and warranties are there to protect the buyer from unexpected issues with commercial contracts, customers accounting, tax, employees and general issues. SN are likely to be interested in any financial reporting issues and the security and any contractual issues with customers or suppliers. **People** Should consider what competencies are being acquired, could these be lost on closing a deal? Would it be possible to include agreements that prevent the team from leaving for a period of time ('golden handshake)? **Integration** Particularly in respect of TT's supply chain – should it keep this standalone, or should SN source ingredients via its own supply chain where possible to try maximise synergies (if so, is this likely to impact the product)?	1 mark 1 mark 1 mark 1 mark

	This mark scheme is not exhaustive – all valid points within answers will be awarded marks. **Syllabus ref:** Unit 1.4.2, 1.4.3 (LO 1.4)	(up to 4 marks)
		Total: 10 marks

Q3	Critically discuss the considerations for SN of buying back the 2028 bond. Recommend and justify whether SN should buy back the bond.	10 marks
		Total: 10 marks
Q3 answer	**Considerations**	
	Objectives of the purchase To reduce ongoing finance costs through refinancing of existing indebtedness.	1 mark
	Bond facts Do the terms of the bond allow the issuer to buy it back early? Are there any regulatory rules that might prevent the US bond being bought back? Are there any non-call or make whole provisions and what margin over treasuries would the bond be discounted at?	1 mark
	Buy back or tender offer If the purchase of the bond breaches materiality thresholds, then a tender offer would need to be made instead. A tender offer is a far more complex and involved process. This would then be a cash or exchange offer.	1 mark
	Bond holders SN needs to consider the holders of this bond as many would have purchased this for its fixed income stream. It needs to understand who the major owners of the bond as these are likely to be large institutional investors and pension funds.	1 mark
	Are they willing to sell or will an approach push up the market price? If it's a tender offer, a consent request would be made.	1 mark
	Assuming SN wish to buy 100% of the bond back they need to make sure that ALL bond holders, however small the holding, need to accept and be repaid.	1 mark
	Timing The company needs to ensure they have the funds to buy the bond back or else match the dates with a new issuance. If a new issuance or the purchase becomes a tender offer, this can take a number months to complete due to documentation, pricing and legal discussions.	1 mark
	Parties involved If it's just a buy-back, SN should be able to complete the purchase on the open market. If it's a tender offer, it is similar to the issuance process where multiple parties are needed such as dealer managers, tender agent, legal counsel and the trustees.	1 mark
	Market disclosure Information must be shared to all bondholders and the market as a buy-back may be price sensitive for the bond.	1 mark

	Tax SN should check with its tax advisers to ensure there are no major tax implications of the buy-back. And there could be tax advantages of buying back the bond. This mark scheme is not exhaustive – all valid points within answers will be awarded marks. **Syllabus ref:** Unit 2.1.3 (LO 2.1)	1 mark
		Total: 10 marks

Q4	(a) Critically discuss the impact of Sarbanes Oxley legislation on SN's treasury function. (b) Recommend and justify best practice in the governance of SN's treasury function.	3 marks 7 marks
		Total: 10 marks
Q4 answer	**(a) Sarbanes Oxley impact** Sarbanes Oxley Act affects all US companies and international companies such as SN that has debt registered with the SEC. This Act had five key provisions: • the PCAOB was set up as the policing body to monitor compliance • guidelines to ensure independent auditors and outside directors • definition of corporate accountability • bigger penalties for fraud • requirement to set up internal controls to ensure the accuracy of financial information. The last provision is the main one that affects a company such as SN. At least annually, the controls that have been defined are tested by independent auditors to assess that the controls are effective and that the financial reporting is accurate. The CEO must sign off on the reports and can receive a large penalty if there is non-compliance.	1 mark
	For SN the exposure evidence highlighted by internal audit should not directly affect the financials and would purely be a process issue. The breaches of exposure, may well affect the financials and are relevant for Sarbanes Oxley.	1 mark
	It is an administrative burden to document and identify the risks, setting up the different types of controls (preventative or detective), defining how they are measured and tested and maintaining detail records to satisfy auditor compliance.	1 mark
	It has helped some companies clarify how the risks relate directly to the financial statements and focus on the more material operational type risks. However, it has been a burden for finance and treasury functions in terms of time and effort and it can be felt to be a 'tick-box' activity. It does not necessarily improve risk management and the focus is purely on the impact on the financial statements.	1 mark (up to 3 marks)
	(b) Governance in the treasury function – best practice SN would be expected to have a very effective treasury governance in place given the size and complexity of its business and the resulting scope of the treasury function. It has undergone internal audit which has only found two issues.	½ mark
	Governance starts with leadership and direction from the top. The main areas that form part of the governance structure are excellently	1 mark

	summarised by W. Spinney "Controlling the treasury environment". This is a selection of the points raised: • board approval • organisation • treasury policies • treasury procedures • documentation (management, treasury and bank) • bank relationships • technology.	
	Board Approval: This sets the remit of what the treasury function is responsible for and the responsibility for approving the treasury policies.	½ mark
	Organisation: The organisation structure of the treasury function should be kept up to-date and available. This should show the formal reporting lines. Job descriptions should be current. SN mention there is formal training in place for regulatory matters.	1 mark
	Treasury policies: These set out the function of treasury, its main risks, how they will be managed and what instruments can be used. It also should detail who is allowed to act, what the limits are and details around reporting. The counterparty limit breaches are serious issue no matter how quickly it was rectified and 10% could be a material amount. Treasury should allow headroom on its limits with its most risky counterparties and follow closely using other measures besides credit ratings.	1 mark
	Treasury procedures: Complex or relatively new activities may need procedures initially and exception or escalation procedures will need documenting. Disaster recovery plans should form part of this. The 'needs improvement' processes for exposure consolidation will need to be documented further and action taken to monitor the reporting and evidence needed. The internal audit reviews should cover risks, controls and procedures and follow up on the two improvement items noted.	1 mark
	Documentation: There should be a clear audit trail of all treasury transactions, and routine transactions recorded in treasury management system. Other documentation should include all bank loans, bond agreement, service level agreements etc.	1 mark
	Bank relationships: A sophisticated treasury such as this will be monitoring the performance of its bank partners with key metrics and analysis that can discussed at bank meetings. It should keep good records of all bank relationships, agreements and meetings.	1 mark
	Technology: Ensure that the system is secure from both physical and remote access. Users have defined roles and access, with clear segregated duties. Contingency plans are in place and have been tested.	1 mark

	This mark scheme is not exhaustive – all valid points within answers will be awarded marks. **Syllabus ref:** Unit 2.4.2 (LO 2.4)	(up to 7 marks)
		Total: 10 marks

SECTION B – 60 marks

FOUR questions all based on separate scenarios, of which candidates must answer THREE (3 x 20 marks).

Question 1 - Background

AB plc (AB) produces a range of safety products for the UK and US markets. It produces fire and smoke detectors, corrosion monitoring systems, hazard detection instruments and some medical devices. It is quoted on the London Stock Exchange and reports its consolidated accounts in GBP.

The business has a good history of growth in revenues, operating profit and earnings per share. Its share price has grown consistently over the last five years.

It has recently acquired another business in the US (ZY) which it fully owns. The business in the US is doing very well, especially the ZY subsidiary, as it has EBITDA margin of 25% compared to the rest of the group at 20%.

ZY has production facilities in the US and employees live locally to the facilities. Intellectual property is held in the UK and AB as the group intellectual property holder charges royalties to all its subsidiaries through a transfer pricing scheme.

The acquisition of ZY has been funded mostly by equity and an external USD100m loan paying a fixed rate.

Financial data and rates & ratios
(Note the accounts below are shown on a non-consolidated basis)

Financials	AB*	ZY
	GBPm	USDm
Revenue	1,000	600
Operating assets	1,300	600
Debt	(400)	(100)
Cash	100	0
Equity (net worth)**	1,000	500

Interest rates	%
Debt	5.0
Cash	0.5

Covenants	AB
Net debt/EBITDA	1.20x
Gearing (gross debt/equity)	50%
Interest cover	8.0 x

*Excluding ZY
**For simplicity assume net worth is sum of operating assets, cash less debt.

The current GBP/USD rate is 1.30, however there are now expectations that the British pound is likely to strengthen, partially due to US weakness globally.

The Finance Director has been mindful of the foreign exchange risks in the business, and the acquisition of ZY was partially strategic as it has competitors in the US marketplace. The treasury function manages transactional risk by hedging forward twelve months of forecast US sales that are received in the UK market. The approach taken is a layered rolling program of cover and 80% of the next three months are hedged.

The finance function has a remit to repatriate cash back to the UK via the most effective means. This includes royalties, interest on debt and dividend payments. The latter are the most difficult to manage as there is uncertainty on both the amount and the timing and hence these transactions are not hedged.

The company had until recently ignored any impact of foreign exchange translation risk but has now decided that it would like to know the impact on its covenants should GBP/USD move to 1.50 in the year.

Q1

(a) Critically evaluate the translation impact on AB's covenants under the scenario that the GBP/USD exchange rate moves from 1.30 to 1.50. — 9 marks

(b) Recommend and justify actions that AB might take to manage this risk. — 11 marks

Total: 20 marks

Q1 answer

(a) Translation impact

EBITDA 20% and 25% of revenues for AB and ZY

Interest 5% and 0.5% for debt and cash

½ mark

Workings	AB	ZY
EBITDA	200	150
Interest	(19.5)	(5)

Consolidation	AB GBP	ZY USD	Consolidated 1.30	Consolidated 1.50
Operating assets	1,300	600	1,762	1,700
Debt	(300)	(100)	(377)	(367)
Net worth = equity	1,000	500	1,385	1,333
EBITDA	200	150	315	300
Interest	(19.5)	(5.0)	(23.3)	(22.8)

2 marks

Ratios	1.30	1.50	% change
Earnings	292.0	277.2	-5.1%
Net worth	1,384.6	1,333.3	-3.7%
Gearing	27%	28%	1.0%
Net debt/EBITDA	1.20	1.22	2.3%
Interest cover	13.5	13.1	-2.7%

2 marks

Impact

The impact of sterling appreciating against the USD is to reduce earnings by 5% (292 to 277) compared to a 15% change in exchange rates. The 5% change is unlikely to be a major issue for shareholders. — 1 mark

	Gearing moves up 1% to 28% but this is well below the target gearing of 50% so should not be of any major concern. There is plenty of capacity to increase debt levels, especially with the ZY, if felt appropriate.	1 mark
	The net debt/ EBITDA level was already on the 1.2x threshold and although it only ticks up to 1.22, it has still breached the threshold and have serious repercussions for the business.	1 mark
	Interest cover drops but again it is well above the 8x target so not a concern.	1 mark (up to 4 marks)
	(b) Actions and considerations Translation risk results from revaluing the balance sheet at accounting reporting dates using the closing spot rate. It is worth noting that if the rate goes up to 1.50 in the year then drops back to 1.30, then the translation affect will be minimal.	1 mark
	The main concern is the Net debt/EBITDA covenant ratio will be breached if the pound strengthens to 1.50. AB could either attempt to reduce net debt levels or increase EBITDA.	1 mark
	Translation impact affects both the balance sheet and dividends that are sent back to the group. Translation changes are accounting impacts with no direct cashflow change (with the exception of dividends paid in cash). However, if it is hedged, then there will be cashflow impact of doing this.	1 mark
	As the US subsidiary produced more than a third of the profits (36% EBITDA @ 1.30) and as some of this is likely to be sent back as dividend, there is an argument for hedging this. As mentioned in the case, the amount and timing are uncertain so rather than FX forwards, options may be an alternative.	1 mark
	The business is very exposed to the USD and the US market, so there could be an argument to change the reporting currency to USD. A number of companies do this such as in the mining and oil sectors.	1 mark
	A common view is that translation risk should be managed passively over the long run, according to purchasing power parity rules, it should average out in the long term. The counter to this is that managers and shareholders tend to have shorter time horizons.	1 mark
	Instruments When foreign fixed rate debt is issued, a corporate may enter into a cross currency swap to convert the debt back to base currency and potentially convert the rate to a floating rate. However, given it has assets and profits in the US it might be better to leave this as a natural hedge against these flows.	1 mark
	Translation risk can be hedged using FX forwards and then rolling these at each reporting date, and making small changes to the principal amount so as to match the net asset exposure. The benefit is that it	1 mark

	acts as hedge to dampen translation movements but the downside is that cashflows are crystallised at each rollover date. For translation risk on dividends, average rate options (ARO) or DARO (double average rate options) are more effective than hedging with FX forwards. Income is accounted for on an average rate for the period. However, these options are more complex and difficult to value. AB plc is a relatively small business and there may not be the internal expertise to monitor and manage them. Look for headroom in loan agreement for FX variations or seek requirement to renegotiate / reset covenants accordingly. Some loan agreements allow for a breach of the period end spot rate if the average rate when translated results in the company remaining within its covenants. This mark scheme is not exhaustive – all valid points within answers will be awarded marks. **Syllabus ref:** Unit 1.3.4a,b (LO 3.4)	 1 mark 1 mark (up to 11 marks)
		Total: 20 marks

Question 2 - Background

High Delivery (HD) is a US investment company that specialises in infrastructure and overseas energy projects. It is a sponsor to a new project to install a small modular nuclear reactor in Kenya. This is a relatively low cost (USD4bn), and fast to implement, project relative to a full scale reactor. There is a consortium of parties involved in the project including the government. The objective is for Kenya to produce clean energy (electricity) as part of its program to diversify its energy sources and reduce its reliance on fossil fuels.

HD is investing USD500m into the project, 90% debt (subordinated) and 10% equity. The discount rate that is required for its cashflow model has been set at 10%. Just over 75% of the funding for the project has come from the banks in the US and Kenya.

The Kenyan government is involved in the project, to provide support to the project and guidance with the regulatory bodies.

The project is expected to take two years to complete using local contractors. Management expertise is being sourced from the sponsor (HD). Once the project goes live, the plant is expected to last for 20 years.

As part of the agreement, HD will receive the cashflows for the first four years of the project. The cashflows from the project are uncertain and a simplistic view is that there is a 90% chance that the cashflows will be USD180m per annum and in contrast a 10% chance that it will produce negative cashflows of USD50m per annum.

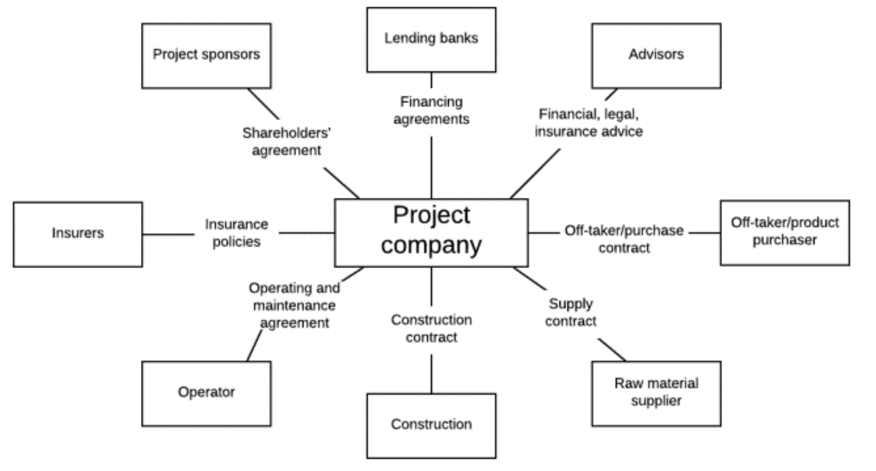
As an incentive, the local government has offered HD the right to abandon the project after one year if it wishes but there is an upfront additional cost (payable to the local government) of USD5m, if HD wants to have this option. N.B. If the option is not paid for upfront, then HD will not have the right to abandon the project after one year.

Assumptions	
Discount rate	10%
Cost of the project	500
Project length	4 years
Project cashflows	
Upside (90%)	180m
Downside (10%)	(50)m

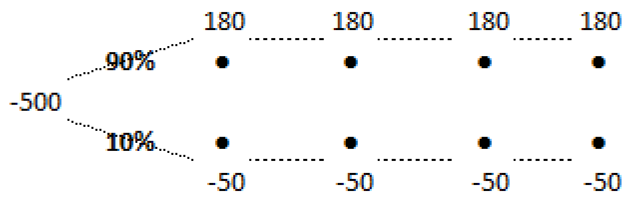
Q2		
	(a) In the context of HD, critically discuss the key project finance related risks, mitigations and how funding could be set up.	10 marks
	(b) Critically evaluate HD's project financials using real option methodology. Within your evaluation you are required to explain the optionality and recommend the decisions that need to be made by HD.	10 marks
		Total: 20 marks

Q2 answer	**(a) Project finance** Project finance tends to be for very large long term projects that require involvement from multiple parties. The project economics depends on the ultimate cashflows and the collateral is represented by the assets that are being built.	1 mark

	Risks of the project: Political & regulatory: this can be a major factor as governments can change through the project life and even sitting governments can change their mind or withdraw their agreement at short notice. Infrastructure: the roads, rail and utilities may be relied up to transport and provide the inputs to the construction and distribution. If this is substandard, this could risk delay or the service quality to the consumer Construction: there can be delays in the creating the asset and hence the cash outflows are extended to happen at a later date. Operations: there can be issues with the efficiency of the plant Raw materials: availability and prices may increase and can be subject to local inflation Labour: risks due to availability and wages of local skilled workforce. Similar issues might affect management but to a smaller extent as these are being sourced from HD. Environmental: this project can be seen to be good for the environment but in contrast, nuclear has had some issues in the past such as recently in Japan Foreign Exchange: the Kenyan schilling has been relatively stable and this would reflect how the country is perceived internally	½ mark per point (up to 3 marks)
	Contractual setup: Nature of these projects involves a number of parties. This will include the investor/sponsor, the banks, government, advisers, operators, constructors and the customer. The key point of project finance is risk sharing. This is established with robust agreements and guarantees between the interested parties in the project. There is often a web of contracts set before the project is started. These include: Take off agreement – agreed volume and price of the electricity for a set number of years; supply or purchase agreements; insurances on cost overrun or political issues, construction and completion agreements and others.	½ mark per point 2 marks



Funding Equity is generally minimal with the sponsor providing subordinated debt. This form of debt can be converted to equity and has a high rate of return which is tax deductible. The rest of the funding may come from various sources such as export agencies, trade finance, bond issues and senior debt from banks. The aim is to share the risks amongst the parties with differing risk appetites and hence type of funding supported.	2 marks
Returns The main driver for return is the discounted cashflows and to ensure that the cashflows cover all the costs including tax, debt costs and contingencies due to delay and foreign exchange risks. As it's mostly debt funded, the discount rate should be based on the weight debt. Measures that are used include the loan life cover (NPV of cashflows / outstanding debt) or project life cover. The inverse of these is the loan to value ratio, similar to what is used for mortgages.	2 marks (total 10 marks)
(b) Real option	
Real options are similar to financial options as they confer the right to act within a given time period and this must relate to an underlying asset. For a real option to have value, the business must have exclusivity over the right to the action. Secondly, the asset must have a marketable value.	1 mark
The relevant project timeline for HD is the four year period postproduction and is relatively short term. However, there is political risk associated with these projects and hence the timing and value of the cashflows.	1 mark
For this specific case, we need to compare the NPV of the project with and without the option. A probability / binomial tree can be used to show the outcomes.	



If it makes a loss in the first year, it will be a continuing loss.

To evaluate the current NPV, it is easier to use an annuity factor as the cashflows are the same for the four years

1 mark

AF = [(1 – (1+r)^-n)]/ r

r = discount rate (10%)

n = number of years (4)

AF_4 = [1- (1+10%)^-4]/0.10 = 3.1699

Years	Cashflow	AF	PV- investment	PV x probability
1-4	180	3.1699	70.6	63.52
1-4	(50)	3.1699	658.5	(65.85)
NPV				(2.33)

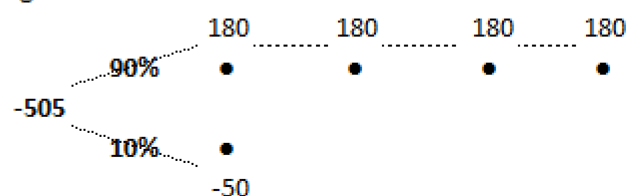
Alternative method

Alternative, use weighted average of cashflows (90% x 180) + (10% x -50) = 157

(3 marks for current project)

Years	Cashflow	DF	PV
0	(500)	1	(500.00)
1	157	0.909090909	142.73
2	157	0.826446281	129.75
3	157	0.751314801	117.96
4	157	0.683013455	107.23
NPV			(2.33)

Thus the project has a NPV and should be rejected on this basis.



Option value

Now to work out if it is worth paying for the option and so that the project can be abandoned after year 1.

Method 1

Simplest method is to work out the incremental change. As it's abandoned after year 1, the three 50m cashflows will not happen and value of these can be discounted back. — 1 mark

NPV benefit = 50 x (AF_4 – DF1) x Probability — 1 mark
= 50 x (3.1699 – 0.9091) x 10% = 11.30

Less premium for the option so net is 6.30 — 1 mark

Method 2

The alternative method is to calculate the cashflows for the 1 year for the downside cashflows, add this to the upside cashflows and take the difference from the original NPV. — 1 mark

Years	Cashflow	AF	PV- investment	PV x probability
1-4	180	3.1699	65.6*	59.02
1	(50)	0.9091	(550.5)*	(55.05)
NPV				3.97

½ mark per column up to 2 marks

(3 marks for option value using method 1 or 2)

*Note the PV investment includes the option premium.

The NPV of the project has moved from -2.33 to +3.97 and hence the decision on the project should be to accept the option. — 1 mark

As the value of the right to abandon is greater than the 5m the company should consider the option. The alternative is to reject the project entirely given its negative cashflow. Even with the option, it is still only marginal USD4m over 4 years with an initial outlay of 495m but it is taking into account the WACC return. — 1 mark

It could be argued that the option has lowered the risk so the discount factor should be lower to reflect the reduced risk and hence a higher NPV would result. — 1 mark

Another consideration is the reputational impact if HD abandons the project after year one from an external aspect and the internal impact on the teams that have worked on the project for it to then be abandoned. — 1 mark

(total 10 marks)

This mark scheme is not exhaustive – all valid points within answers will be awarded marks.

Syllabus ref: Unit 1.2.5, 2.1.6 (LO 1.2, LO 2.1)

Total: 20 marks

Question 3 - Background

LineQuick (LQ) is a large international telecommunications company based in the UK with operations worldwide. It has recently acquired a telecom operator in South America. It provides voice and data services to its customers who are categorised into four segments: consumer, enterprise, global and cable (internet connectivity). The global segment refers to overseas sales of voice and data products.

Revenue breakdown by product (GBPm)			
	Yr 2020	YR 2019	% Chg
Consumer	10,700	10,300	3.9%
Enterprise	5,900	6,200	(4.8%)
Global	4,700	5,000	(6.0%)
Cable	2,200	2,300	(4.3%)
Total	**23,500**	**23,800**	
Revenue breakdown by region			% chg
UK	19,700	19,750	(0.3%)
EMEA	2,300	2,500	(8.0%)
Americas	950	1,000	(5.0%)
Asia	550	550	0.0%
Total	**23,500**	**23,800**	

Revenues are slightly down although profit margins have improved. However, cashflow has dropped due to higher levels of investment and weakness in cash generation from operations.

Income	**YR 2020**	**YR 2019**	**% chg**
Revenue	23,500	23,800	(1.3%)
Operating profit	3,300	3,100	6.5%
Operating margin	14.0%	13.0%	7.8%
Net profit	2,200	2,000	10.0%
Balance Sheet			
Cash	4,900	3,600	36.1%
Working capital	900	(1,800)	(150.0%)
Net fixed assets	21,500	20,000	7.5%
Net debt	12,000	10,700	12.1%
Cashflow			
Cash from operations	4,300	4,900	(12.2%)
Capex	(3,700)	(3,400)	8.8%
Dividends	(1,500)	(1,500)	0.0%
Net change in cash	(900)	0	

LQ has over 100 subsidiaries and most are wholly owned although some of the business units recently acquired in South America have some (less than 10%) minority interest. Some of the entities in this region are also financed with local debt. The company operates a transfer pricing mechanism to charge its subsidiaries. The company is keen to integrate the newly acquired business units, adopt the preferred funding strategy and ensure that cash repatriation is optimised.

The South American business sources some of its hardware from Asia. The business is concerned that the supply may be affected by the impact of the new relationship after the take-over. The company currently buys the goods on an open account basis but is considering using documentary credits for its

more important suppliers in that region. It wishes to enhance the existing relationships and in the longer term wants to be able to negotiate more competitive pricing for these items.

Q3	(a) Critically discuss the options available to LQ for funding its overseas operations and the factors that need to be considered so this aligns with its corporate objectives. (b) Critically evaluate the proposed change of payment method and the likely benefits and challenges for LQ that may result from such a change.	10 marks 10 marks
		Total: 20 marks

Q3 answer	**(a) Funding subsidiaries**	
	As a large international telecoms operator, the funding process will be well documented with a clear strategy on how best to fund operations.	1 mark
	Given the company has a transfer pricing policy in place, this would suggest that intellectual property is centrally controlled and is charged out to business units where a royalty fee is paid back to group.	
	A key objective would be to repatriate cash to the centre in the most cost effective and efficient way possible.	1 mark
	There are three main funding options: equity, debt (intercompany loan) or external local debt.	
	• Some equity will be needed as core funding but this source is expensive and not tax efficient. • Intercompany debt will be a preference for the group assuming this meets tax and regulatory requirements. Loans need to be made on an arm's length basis • External local debt already exists and there is the benefit that this will help maintain local relationships.	1 mark
	The factors that influence how a subsidiary is funded are: Ownership	
	With wholly owned subsidiaries, the company is not restricted by outside shareholders who may have an objection or see new equity injections as bonus for them, namely that the company controls the investment outright.	1 mark
	Subsidiary cashflow/profitability The source and type of funding will depend on the business unit's ability to pay. Transfer pricing and the resulting royalties will be part of operating cost and should be justifiable. For debt, there is the interest cost after operating profit. And for equity, this depends on the availability to pay dividends which could be constrained by profitability, cashflow or capital controls in the country of operation or currency controls.	1 mark

	Tax This a major consideration for funding as thin capitalisation rules may preclude further debt being pushed down to a subsidiary. So there can be a finite limit to the level of gearing. Secondly, intercompany loan interest may be charged withholding tax and if there is not a double tax agreement in place, this is an additional cost and activity to manage.	1 mark
	Administration Equity tends to be a one off injection of funds and treasury's involvement is only concerned with the dividend cashflow timings. Inter-company loans need to satisfy 'arms-length' principles and need to be managed by treasury.	1 mark

	Intercompany loans
	• Benefits of this type of funding:
	  ○ provide control and visibility of funding across the business to treasury
	  ○ a cheaper form of funding than equity or external debt
	  ○ more certainty and flexibility of the funding being in place without being withdrawn or reliant on an external provider
	  ○ interest is charged before tax so tax efficient whilst dividends only payable from distributable reserves.
	• Drawbacks and challenges:
	  ○ they are not always accepted, thin cap rules may prevent an optimum level of funding being sourced
	  ○ local capital controls/regulations in some countries may make interest/principal (re-)payments very difficult
	  ○ the loans need to managed and monitored to ensure tax compliance
	  ○ withholding tax may apply in some jurisdictions.
		½ mark per point
		
		(up to 10 marks)

	(b) Change of payment terms from open account to documentary credits	
	LQ South America are paying on open account to its suppliers and this is likely to be due to the relative buying power and credit quality of its business compared to the size of its suppliers. This is advantageous to the business as it allows flexibility in payment timing. However, the case mentions that post acquisition, some of its larger supplier may become nervous and attempt to change payment terms.	1 mark
	So by offering documentary credits, the business is offering a strong incentive that should help build stronger relationships. And, with this incentive, in the longer term, it should place it in a stronger bargaining position when it comes to pricing reviews.	1 mark
	Documentary credits effectively guarantee payment for the goods from the issuing bank, as long as the criteria in the documentation is	1 mark

	complied with. So this is a major benefit to the supplier and risk to LQ if the goods are not to standard, damaged or delayed. There are other payment instruments that LQ might consider such as documentary collection as these have less risk to the buyer than documentary credits and there is no guarantee of payment. A longer term solution would be for LQ to review its supplier base globally rather than looking at one region in isolation. Could its European suppliers provide components to the South American market? The main advantages of offering the proposed payment method are: • provides an incentive and evidence that LQ wishes to build long term relationships with its suppliers and hence support its supply chain • the added benefit may help in price negotiations in the longer term. The drawbacks of such a change to payment methods are: • payments terms will be defined by the terms of the documentary credit with its issuing bank settling on its behalf • setting up documentary credits will add to its payment costs as the bank will charge for providing a guarantee of payment • the volume of documentary credits will reduce the debt and credit capacity provided by that bank • there is added administration of setting up a standard letter of credit facility with its bank. Overall, this is an unusual move by the company to maintain its supply chain but to ensure continuous supply this may be a prudent move. This mark scheme is not exhaustive – all valid points within answers will be awarded marks. **Syllabus ref:** Units 2.1.7 (LO 2.1)	 1 mark 1 mark 1 mark 1 mark per point below (up to 10 marks)
		Total: 20 marks

Question 4 – Background

SecureHomes (SH) is a housing association providing affordable homes to three counties in the South East of the UK. It has a portfolio of 20,000 properties and rents these out. The business is responsible for maintaining the properties and in return secures a market rent from tenants. The rental agreement with tenants has an inflation-linked clause where the rent rises annually with consumer price index (CPI) but with a maximum rise restricted to 2%.

SH receives some financial support from local authorities. However due to cut-backs in recent years, the majority of funding is bank loans. The debt is approximately GBP1bn with two of the loans, GBP50m each, maturing in the next three months. Over 90% of the debt matures in five years.

SH wishes to invest in more properties and also needs to refinance its existing bank loans that are due to mature. Property investments tend to be held for over 20 years although there is some turnover.

ABC is another housing association. ABC has successfully issued retail bonds on ORB (book of retail bonds). ABC has more assets on its balance sheet and plenty of experience in the capital markets. It has a credit rating of A+.

However, SH does not have any experience of issuing bonds and is concerned about the process to launch a bond. It is interested in the benefits of this type of issue in comparison to its normal method of raising bank debt and any downsides to watch out for.

Last year, London Capital and Finance was issuing 8% mini-bonds in the UK market and unfortunately went into administration, leaving some private investors with major losses on their investments.

Extract of the financials (not all lines are shown)

Financial statements	2020
Income statement	GBPm
Turnover	200
Operating costs	(150)
Profit on asset sale	30
Operating profit	80
Interest	(25)
Profit before tax	55
Balance sheet	
Fixed assets	
Property	1,600
Debtors	100
Cash	100
Total assets	1800
Current maturity of long-term debt	(100)
Loans long term	(900)
Net assets	800
Cash flow statement	

Cash from operations	150
Interest paid	(30)
Investment in property	(180)
Drawdown of loans	120
Repayment of borrowings	(30)
Net change in cash	30

Competitor bond:

Coupon	4.5%
Principal	150m
Term	12 years
Interest	6 months
Tradeable size	2,000
Current price	114.0

Q4	(a) Critically evaluate the feasibility of SH issuing a retail bond to meet its refinancing requirements, both immediate and longer-term. (b) Critically discuss the rationale for SH of issuing a Retail Price Index (RPI) linked retail bond rather than a fixed-rate retail bond.	14 marks 6 marks
		Total: 20 marks
Q4 answer	**(a) Retail bond issue** The order book of retail bonds (ORB) is the UK retail market for these bonds. They are governed by the London Stock Exchange. Entering into a bond, even on ORB, is a major initiative for SH. The main considerations are identifying the business objectives, bond details, the issuance process, pricing and the relative pros and cons of this issuance. **Rationale** The obvious reason is that SH need to refinance GBP100m of its debt in the next three months and it needs to consider what options are available. As its only 3 months away, this rules out a public issue given that SH has not issued any form of bond previously; however, SH could still consider this for re-financing debt maturities that are further out **Bond Details** SH need to decide how much they wish to raise, what the term of the bond should be, tradeable size and the likely coupon rate that they will achieve. They also need to consider guarantees and if any security will be provided. As they have a funding gap of 100m and this represents 10% of its current debt, this would be a reasonable size for the ORB market. SH should consider a bond of a longer date to match its assets, as currently all debt matures within 5 years. The other housing association	 1 mark ½ mark per point

	issued its bond for 12 years. Fixed rates are more common on ORB and are of interest to investors. The rate will depend on SH's credit standing but given that it does not have a rating and is smaller than its competitor the margin over government bonds is likely to be higher. SH needs to ensure there is sufficient investor appetite for its bond issue, taking into account market sentiment to the housing sector and then specifically to its proposed issuance. **Process and Criteria** The process and steps include: • SH will need to ensure there are market makers for its bond before it can be listed • the first step is that they need to apply for a listing in London through the UKLA (UK Listing Authority) • a prospectus needs to be drawn up and this will need to meet FCA guidelines • the size of the bond can be up to 300m and the tradeable unit size can be as small as GBP 100 and maximum 10,000 but SH would no doubt match its competitor and use 2000 • once it is admitted by UKLA to the official list, the LSE will then admit to the main market where it can be traded • settlement is generally by through CREST, so this would need to be setup • the securities must not contravene the companies incorporation documents • authority to issue debt must be secured from the Board or the Association's equivalent. The listing process can be quick (within weeks), especially if the company has experienced advisers who have done this before. **Advantages and disadvantages** These include: Positives: • a bond issue will diversify the sources of funding for SH and hence may reduce refinancing risk • these issuance process often has a bond roadshow to market this to potential investors. The issuance of a bond should improve the company's status in the market as only larger and more sophisticated companies issue bonds. It should also increase its investor base and awareness of its business • the bond market will provide SH with more flexibility with the terms and amount • retail bonds can be unsecured but that will depend on the pricing and restrictions in place	½ mark per bullet (up to 4 marks) ½ mark per point (up to 6 marks)

	• a credit rating is not required for listing but is beneficial for a successful transaction • ahe bonds are tradeable, have a secondary market and there is good price transparency • peer group are issuing these bonds so it is a proven funding method for this industry • treasury and the finance function will gain expertise in diversifying its debt portfolio and this could act as springboard to the public market. Downsides: • depth of market is limited relative to normal bonds • Iisuers are generally lower credit quality • the biggest issue is the case of LCF (London Capital & finance) which collapsed in 2019, causing many investors to lose their investments. Mini bonds are more risky than retail bonds as they are unlisted, can't easily be traded and have less disclosures. However, the impact has still affected sentiment in the retail bond market • the volume of new bonds to the market seems to have declined severely. Again, this could be viewed as an advantage as there is less competition • retail investors tend to be less sophisticated and may not fully understand the bond, have read its prospectus and understood the risks. The arguments for a retail bond for SH, would have been strong. However, the negative market sentiment means that it is unlikely to be enough market interest and hence best avoided for now.	1 mark for conclusion (up to 14 marks)
	(b) Inflation linked bond Indexed linked bonds typically have a small coupon and the index increases the principal amount. However, there are other variants where the index affects the interest charge rather than the outstanding principal. Practical considerations: • inflation linked bonds tend to have a lower coupon due to the indexing of the principal and would be lower cost of financing in the earlier years • the company has income linked to CPI, albeit it is capped, thus there are economic grounds that the bond interest would offset and hence act as a hedge. Note there is significant basis risk as RPI is higher than CPI and can also diverge • the index link would help diversify some of the interest rate risk • index linked bonds are more difficult to value • inflation is a macroeconomic variable and means there is no certainty of the growth and hence the cost	1 mark per point up to 6 marks

- the principal increases over time increasing debt levels and as mentioned above cannot be directly forecast
- the inflation index of the bond will not have a cap and inflation above 2% will not be matched by rising rental income to the full extent of the rise. The cap and the basis risk mentioned above will have an impact on hedge accounting
- investors in indexed linked bonds tend to be large institutions and pension funds where inflation is relevant to its portfolio. While inflation-linked retail bonds do exist, majority of retail investors are likely to be less sophisticated and so prefer a simple fixed return that they understand.

This mark scheme is not exhaustive – all valid points within answers will be awarded marks.

Syllabus ref: Unit 2.1.3 (LO 2.1)

Total: 20 marks

FORMULAE SHEET

Financial Valuation

Capex

Replacement capex = Capex charge * $(1 + \text{inflation})^k$

Where:

$$k = \frac{\text{Accumulated depreciation}}{\text{Depreciation charge}}$$

Working Capital

$$\text{WC adjustment} = \frac{WC}{(1+\text{inflation})} - WC$$

Where:
WC = working capital level

Weighted Average Cost of Capital (WACC)

$$WACC = Kd\,x(1-Tc)x\frac{D}{D-C+E} + Kc\,x(1-Tc)x\frac{C}{D-C+E} + Ke\,x\frac{E}{D-C+E}$$

Where:
Kd = market cost of debt
Kc = market return on cash
Ke = cost of equity
TC = corporation rate
D = market value of debt
C = market value of cash
E = market value of equity

Enterprise Value

$$\text{Enterprise value} = \frac{SCF_1}{WACC - g}$$

Where:
SCF_1= sustainable cash flow for the following year SCF * (1+g)
g = growth rate in perpetuity

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