ACT
PAST PAPER

Diploma in Treasury Management (AMCT)

Unit 2: Risk Management for Treasury

November 2024

This is a past paper for Unit 2 of the Diploma in Treasury Management (AMCT)

Based on the syllabus assessed from 1 August 2022.

INTRODUCTION

This past paper has been produced by the Awarding Body at the Association of Corporate Treasurers (ACT) to assist students in their preparation for the Diploma in Treasury Management assessments. It is important to highlight that the answers provided in this paper are not exhaustive and that any other reasonable answers would be awarded marks where necessary in a marked assessment. It contains a past exam for the specified unit as well as past answers. Ideally, students should have completed the majority of their Diploma in Treasury Management studies for Unit 2 before attempting this past paper.

Students should allow themselves 180 minutes to complete the exam plus an additional 25 minutes reading time. They should then review their performance to identify areas of weakness on which to concentrate the remainder of their study time. Although the past exam in this guide is typical of a Diploma in Treasury Management 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 examination, students 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 paper is a professional paper that as well as testing theory expects application to practice at a managerial level.

The best way to approach written assessments is to work methodically through the questions. You 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 this means there are marks available for the workings out. You will be able to make rough workings on a piece of paper during the exam and on screen should you wish to, however these will not count towards your final mark.

ASSESSMENT INFORMATION AND TEST SPECIFICATION

The Diploma in Treasury Management assessments for Units 1 and 2 each have 4 written questions, of which you must answer 3, and will involve a pre-seen case study workbook that is released no later than two weeks prior to the assessment date. The papers will be split into sections A and B and can be made up of either one case study or two case studies; each unit exam is worth a total of 100 marks. For the purpose of this past paper the questions follow each case study.

Diploma in Treasury Management assessment test specification:

Section	Amount of questions	Marks available
Section A	1 case study based question	50
Section B	3 shorter case study based questions, of which candidates choose to only answer two	25 marks each
Total	**3**	**100**

Under exam conditions, **3 hours** (180 minutes) is allowed for the Diploma in Treasury Management assessments plus an additional 25 minutes reading time.

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 for the purpose of this past paper, you may use a non-programmable scientific calculator.

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

1 long form question worth 50 marks based on a pre-seen case study. This question should test knowledge, analysis, application insight, evaluation and justification as appropriate to level descriptors. This is a professional paper and application to practice should be at 'management' level.

Total available for Section A: 50 marks

QUESTION 1: CASE STUDY

Avatar Technologies GmbH (ATG) is an international company with headquarters in Germany and subsidiaries in China, the UAE, South Africa and the USA. ATG is a world market leader for central heating systems. Its shares are listed on the major stock exchanges. It offers its customers technologies for heating, cooling and hot water preparation that help to successfully shape the energy transition in the building sector.

ATG is regulated in all jurisdictions. It has always updated its heating technologies and designs to remain compliant with the laws of its various operating jurisdictions. It has also employed environmentally friendly methodologies and moved with the trend to keep producing systems that deliver the best user experience.

As a major player in the industry, in February 2023, ATG began investing heavily in a new development initiative in preparation for an anticipated changed energy law in Germany, expected to be introduced some time in 2025. This law is expected to have a major cost implication to new infrastructure buildings, as installing the currently available heating and cooling systems would come with a higher energy tax. ATG has attempted to verify all of this information, but it remains unconfirmed. ATG's new development initiative involves a new production plant and new development research. ATG has spent very little on maintaining its current systems because of the expected law change in Germany.

The following data are extracted from ATG's annual report and financial statements.

EURm	**2023**	**2022**
Total revenue	1,930.80	1,856.90
Operating profit	391.50	315.90
Interest income	17.90	18.60
Interest expense	(108.20)	(114.20)
Profit for the year	**271.10**	**181.20**
EBITDA	605.10	591.60
Non-current assets		
Investments in new development initiative	2,198.10	1,903.80

Plant, equipment, inventory	4,457.00	3,964.10
Securities and promissory note loans	216.30	213.00
Other non-current assets	565.80	518.10
Total non-current assets	**7,437.20**	**6,599.00**
Current assets		
Other current assets	221.70	263.70
Cash and cash equivalents	450.50	457.40
Total current assets	**672.20**	**721.10**
Total assets	**8,109.40**	**7,320.10**
Total equity	**2,842.40**	**2,680.10**
Non-current liabilities		
Loans and other borrowings	3,185.60	2,751.80
Trade accounts payable	21.90	24.00
Other non-current liabilities	1,189.20	1,020.80
Total non-current liabilities	**4,396.70**	**3,796.60**
Current liabilities		
Trade accounts payable	178.80	172.40
Loans and other borrowings	295.20	322.70
Other current liabilities	396.20	348.80
Total current liabilities	**870.20**	**843.90**
Total liabilities	**5,266.90**	**4,640.50**
Total equity and liabilities	**8,109.20**	**7,320.60**

By August 2024, ATG was 95% complete with respect to its product reinvention/upgrade and was excited to go to market with new futuristic systems in 2025, knowing that 75% of the heating and cooling systems in the market would become inferior due to the high cost of usage. However, in August 2024, there was an unconfirmed news story of a possible postponement of the effective date of the new law to 2034, to give a 10-year period for industry players to prepare for the change. This has left ATG potentially exposed to some financial risk such as:

- market risk including interest rate risk, equity risk, and commodity price risk
- liquidity risk, given the possibility of a default in short-term financial obligations if sales are affected
- operational risk due to the possibility of failed internal processes or business disruption
- regulatory risk due to potential regulatory actions from to new laws and regulations
- Systemic risk – the temporary collapse of the market segment due to industry disruptions can lead to widespread economic slowdown.

ATG's post-pandemic recovery strategy projected a 10% revenue increase year-on-year. This was achieved in 2022, however, channelling all efforts in 2023 in the new development and products launch preparation in 2025 led to ATG achieving a revenue increase of only 4% in 2023.

ATG is funded mainly through the retained earnings of its operating businesses and external financing; these funds are primarily required to finance capital expenditure. ATG has unused credit lines amounting to EUR253.2m (2022 EUR318.9m), of which EUR142.2m (2022 EUR159.6m) is allocated for future capital expenditure in infrastructure renovations and expansion projects.

In 2023, ATG had spent capital expenditure of EUR659.4m on new development initiatives. This is much higher than the capital expenditure of EUR190.3m in 2022 which did not include new development initiatives.

At the balance sheet date, there was a mix of borrowings consisting of project financing (21.5%), external bonds (4.8%), bilateral loans (43.1%), and promissory note loans (30.6%). Overall, financial liabilities have an average remaining term of 5.5 years. Accounting for interest rate hedging measures using interest rate swaps, the floating rate portion of gross debt was approximately 27%, and the fixed portion approximately 73%. Floating rate debt pays interest linked to Euro short-term rate (ESTR). ATG does not currently have a public credit rating.

ATG's debt is subject to two financial covenants:

1. leverage (net debt/EBITDA): should be less than 5.2x
2. interest coverage (EBITDA/interest expenses): should be above 4.8x.

ATG's liquidity profile is given in the table below. Financial liabilities are stated as undiscounted payments and include interest. Forward interest rates are derived from the current yield curve to determine interest payments on liabilities bearing interest at floating rates.

EURm	**2023**	**2024**	**2025-29**	**2030-34**	**2035 and beyond**
Loans and other borrowings	372.50	321.20	1647.00	1,119.50	268.95
Lease liabilities	33.00	23.10	90.60	28.05	9.30
Trade accounts payable	172.40	14.85	6.75	2.40	0.00
Other financial liabilities	35.40	0.00	0.00	0.00	0.00
Total	613.30	359.15	1,744.35	1,149.95	278.25

ATG is under pressure from multiple stakeholders to create a recovery strategy given the news of the postponement.

QUESTION 1

a.	Evaluate the effectiveness of ATG's liquidity management given its new development initiative. Within your answer you are also required to recommend and justify future actions.	25 marks
b.	Assess the key regulatory risks that might materially affect ATG's profitability.	6 marks
c.	Assess the potential financial impact of the risks to which ATG is exposed, given the uncertainty over the new development initiative.	10 marks
d.	Discuss the potential solutions to mitigate the financial impacts assessed in (c) above.	9 marks
		Total: 50 marks

Mark scheme

Q1a

• ATG could renegotiate debt covenants, currently maximum leverage of 5.2x and minimum interest coverage of 4.8x. • A negative working capital in 2023 and 2022 may indicate and extended liquidity issues. Working Capital = (Total Current Assets - Total Current Liabilities) 2023 Working Capital = 672.15 − 870.15 = (198) 2022 Working Capital =721.2 −843.9 = (122.8) • These are likely to be breached if revenues fall slightly. • Leverage has deteriorated and is approaching its limit: 5.0x (2023: 4.4x). • Interest coverage is close to its limit: 5.6x (2022: 5.2x). • Current net debt of EUR3,030.3 implies minimum EBITDA of EUR582.77 fall of 3.7%. • There is slightly more headroom under the interest coverage ratio: 4.0x interest implies minimum EBITDA of EUR519.36m. • Average remaining term is only 5.5 years. • Available borrowings of EUR142.2m allocated to future capital expenditure in infrastructure and operating projects. This can mean a good risk migration plan is in place for the identified risks. • Continue with diversified funding sources, refinancing debt with more longer-term debt, and replacing debt with equity given the high gearing. • Currently bilateral loans (43.1%), promissory note loans (30.6%), project financing (21.5%) and bonds (4.8%). The large proportion of bilateral loans may indicate ATG is over-banked. No further information is given to know whether there is concentration risk or are loans from multiple lenders • Liability maturities are spread out, but the bulge in 2025-29 AND 2030-34 indicates that ATG planned that repayment would be funded by sales of the new product in the coming year which is now threatened. • There is no information on currency breakdown, so it is not possible to see the steepness of the yield curve. Yields may have fallen since the debt was issued. • ATG has potential liquidity from EUR450.45m in cash and cash equivalents to	1 mark per valid point

meet short-term needs. • Much information is not provided to access the counterparty credit risk relating to these investments. • There is also EUR216.3m in securities and promissory notes, though these are likely to be less liquid. **Future Actions** • ATG should consider getting a public credit rating. This will broaden the range of investors who could buy its debt and could potentially reduce borrowing costs. • Swapping more fixed rate debt to floating rate could reduce interest payments, however, it should only be considered if interest rates are falling. • ATG could consider borrowing in the local currencies of their operations to better match assets and earnings – no mention of currency breakdowns of revenues and/or expenses, and debt. • There might be a need to temporarily reduce staff number to make up for expended cost. • Given the unconfirmed news and the uncertainty around the it, attempts to verify the news should be made. If confirmed, slowdown ATG's capital expenditure. • ATG could raise additional capital to offset reduced revenues. The capital should be equity not debt, to lower gearing and covenant risk and also lengthen maturity profile of capital. • ATG must assess to what extent its revenues are sensitive to interest rates and to FX rates, and then manage the FX and interest rate risks accordingly. If interest rates are low, so long-term bonds are a possibility. • Equity finance would provide more cash flow flexibility and lower gearing which has risen. • ATG could extend borrowing maturities to match the duration of assets. • ATG also has a lot of cash on the balance sheet, but it is not clear what the company does to invest this cash. It would need to create a reliable cash flow forecast to see if its cash invest this cash and for how long if it was able to achieve this. If shorter term, the rates would usually be lower (assuming positive yield curve). Shorter term investments are lower risk than longer term as there is lesser chance that the assessment of the counterparties credit could change and therefore with longer term rates this credit risk is compensated.	1 mark per valid point **Total marks: 25**
Q1b	
• Changes in regulation. - Environmental regulations - Competition regulations - Intellectual property regulation - Policy regulations • ATG operates in a highly regulated market affected by government intervention. • Possible reputational risk arising from temporal layoff of staff to cut down cost. • Heavy risk of a sudden change of policy or intervention outside the established regulatory framework.	½ mark per valid point

- There is not mentioned of price caps, hence, there could be risks if price caps are set, and then if they are not set at an accurate rate: ATG margins are squeezed by actual inflation and return on equity differing from the regulator's inflation estimates and that estimates used in future regulation are detrimental to ATG.
- Risk that post-COVID revenue recovery strategy failed in 2023 at 4% increment (2022 at 10% increment).
- Impeded maintenance of existing systems and development of new systems shows weakness in internal policies.
- A sudden reconfirmation of the policy may lead to a labour shortage and bottlenecks if staff cannot be adequately increased in a timely manner.

Total marks: 6

Q1c

- Higher depreciation of assets will reduce profits and so EPS. There is also the major risk that assets will be written-down if there is a postponement and as a result such assets become less valuable and obsolete. Higher impairment could devastate profits and gearing and trigger insolvency.
- Reduced revenues from reduced sales as 2023 had focused on developing new products instead of restocking the old products.
- Reduced revenues from reduced demand as consumers would have to wait on the news to determine which model to purchase.
- Reduced revenues will further impact the financial covenants, which are already in danger and impact on current ratio – which is already low.
- Currently unclear direction for existing products. This might impact product management and support and further impact sales.
- Change in market preferences regarding the heating/cooling and energy conservation method installed in new facilities may lead to reduced revenue.
- Increased costs of operation in the face of a potential low revenue and margin for 2024.
- More regulation, both at local and national level could increase the cost of doing business.
- Reduced liquidity.
- Divestment by investors constrains the performance of the share price.
- Increased rating agency and lender/investor scrutiny increases the cost of debt. Also makes refinancing harder. Falling share price makes equity finance harder and costlier. Potential negative impact on dividend policy if dividend is cut.
- ATG has 73% of its debt fixed and 27% of its debt is at floating rates. It is exposed to changes to interest rates though at a minimal level
- ATG derives revenue from several countries, which exposes it to currency risk.
- ATG is listed on major stock exchanges, it is subject to equity price risk. Changes in markets where it operates, geopolitical risks could negatively impact ATG's share price.
- ATG will also be exposed to competitor risk, which will result in price tension.

½ mark per valid point

Total marks: 10

Q1d

- Increase advertising spend and lobbying to argue against regulation.
- Conduct scenario analysis to understand the potential impact of different regulatory outcomes and prepare alternative strategies and contingency plans for minimizing the influence of regulatory change.
- Establish dialogue with investors and lenders on their requirement.
- Greater transparency required over the businesses and in reporting requirements.
- Consider obtaining regulatory risk insurance to cover potential financial losses due to regulatory changes.
- Explore alternative financing sources of financing, such as debt restructuring or government grants, to maintain liquidity.
- *Cost reduction and efficiency measures*: Make operations cost effective so that they do not create great impact on finance department
- Stakeholder engagement: Focus greatly on investors, clients, employees who need managing expectations; people should be aware of what you are doing.
- Ensure that contracts with suppliers, customers, and partners include clauses that protect against regulatory changes, such as force majeure or hardship clauses.

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

Syllabus refs: 2.1.1, 2.1.3, 2.1.4, 2.2.1 2.2.2, 2.2.3, 2.2.4, 2.2.5, 2.3.2, 2.3.3, 2.3.4, 2.4.1, 2.4.2, 2.4.3, 2.4.4, 2.5.1, 2.5.2

½ mark per valid point

Total marks: 9

Total: 50 marks

SECTION B – 50 MARKS

3 longer form questions, based on mini case studies, of which 2 are compulsory (2 x 25 marks).

Questions should test knowledge, analysis, application insight, evaluation and justification as appropriate to level descriptors. This is a professional paper and application to practice should be at 'management' 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.

Total available for Section B: 50 marks

QUESTION 1 : CASE STUDY

Comb Larry Merchandise (CLM) is an Agro-goods company headquartered in Australia and engaging in four activities:

1. production: cultivating/harvesting crops
2. procurement: sourcing raw materials and agricultural products
3. processing: refining raw goods into consumable products
4. exporting/importing: engaging in international trade, given its multiple geographic markets.

Currently, CLM operates in six different geographic markets. Its revenue breakdown by key markets is given below:

AUDm	**2022**	**2021**
Europe, excluding the United Kingdom	5,450.49	5,183.43
Australia	65.37	37.10
United Kingdom	3,541.16	3,663.05
United States	5,788.13	5,575.98
China	2,437.97	1,561.11
Rest of the world	9,779.97	7,503.00
Total	**27,063.06**	**23,523.66**

The following data are extracted from the annual report and financial statements:

AUDm	**2022**	**2021**
Revenue	27,063.00	23,523.60
Operating profit	**4,736.25**	**3,321.90**
Profit for the year	**3,666.60**	**2,397.30**
Selected information extracted from the income statement, net of tax		
Of which, FX adjustments of investments in subsidiaries	279.45	(753.15)
FX hedging instruments	(21.15)	(35.40)

Other items	(10.65)	282.75
Total other comprehensive income for the year	**247.65**	**(505.80)**
Total of profit for the year and other comprehensive income	**3,914.25**	**1,891.50**
EBITDA	**7,609.05**	**6,185.85**
Total intangible assets	**9,212.55**	**8,592.00**
Of which, goodwill	5,464.50	5,256.00
Brand	1,308.30	1,308.30
Other intangible assets	2,439.75	2,027.70
Property, plant and equipment (PPE)	3,199.95	2,542.35
Right-of-use assets	4,962.45	3,721.50
Deferred tax assets	836.25	944.10
Other financial assets	358.95	302.25
Total non-current assets	**18,570.15**	**16,102.20**
Inventories	2,644.80	2,411.40
Trade receivables	2,033.10	1,076.70
Derivative financial instruments	231.60	434.85
Cash	1,304.70	3,603.00
Other current assets	1,911.15	1,101.45
Total current assets	**8,125.35**	**6216.00**
Total assets	**26,695.20**	**24,729.45**
Total equity	**6,495.30**	**9,143.55**
Loans and borrowings	9,852.60	2,556.30
Other non-current liabilities	636.45	913.95
Total non-current liabilities	**10,489.05**	**3,470.25**
Loans and borrowings	2,559.90	4,944.75
Derivative financial instruments	143.25	146.85
Trade payables	3,831.00	3,974.25
Other current liabilities	3,176.85	3,049.65
Total current liabilities	**9,711.00**	**12,115.50**
Total equity and liabilities	**26,695.35**	**24,729.30**

Foreign currency risk

CLM's activities are mainly denominated in currencies other than AUD. Revenue is mainly denominated in USD, GBP, CNY and EUR. A substantial portion of costs relates to raw materials purchased in USD and all debt is in AUD.

According to CLM's risk policy, its strategy is to hedge foreign currency risks related to net cash flows to stabilise cash flows in foreign currencies and to protect the profitability of each subsidiary by hedging back to their respective functional currencies at the subsidiary-level. The parent does not hedge subsidiary profits or cash flows from subsidiaries, to AUD, although CLM is considering its policy with regard to hedging net assets. Foreign currency cash flows are hedged only at the subsidiary level. 60% of foreign currency cash flows have been hedged for 2023 based on a rolling 12-month liquidity forecast. Hedging is updated at every month-end. Hedge ratios decrease over time to maturity and cash flows are hedged from one to 12 months forward.

Target hedge ratios are as follows:

%	Minimum	Maximum
1 – 3 months ahead	70	100
4 - 6 months ahead	70	90
7 – 9 months ahead	50	70
10 – 12 months ahead	30	50

CLM uses several financial instruments to hedge foreign currency risk at the subsidiary-level only. These involve currency swaps, forward contracts, and options.

The table below illustrates the group-level currency revaluation impact on net profit and changes in equity resulting from a 10% appreciation of AUD FX rate after the effect of hedge accounting.

AUDm		2022		2021	
	(appreciation of AUD)	Profit (loss) before tax	Equity	Profit (loss) before tax	Equity
USD	10%	(129.00)	(177.00)	(103.50)	31.50
GBP	10%	(48.00)	(85.50)	37.50	(48.00)
EUR	10%	(162.00)	(136.50)	12.00	274.50
CNY	10%	(43.50)	(10.50)	52.50	31.50
TOTAL		**(382.50)**	**(409.50)**	**(1.50)**	**289.50**

Covenants

- Leverage ratio (net debt/EBITDA) should not exceed 3.0x.
- Interest coverage ratio (EBITDA/interest expense) should be at least 4.5x.
- Minimum cash balance should not be less than 750m AUD.

Maximum gross debt-to-equity ratio should not go above 2.0x.

QUESTION 1

a.	Evaluate the effectiveness of CLM's foreign currency risk management approach.	10 marks
b.	Evaluate the likely indicators that derivatives counterparties could use to monitor CLM's creditworthiness considering its foreign currency risk management policy.	6 marks
c.	i. Assume 50% of debt is in USD. Calculate, showing your workings, the new gearing ratio for 2022 assuming a 10% AUD appreciation, that causes a net change of equity of MINUS AUD 409.50m. ii. Discuss the issues that may arise due to having all debt in AUD for 2022. iii. Propose a hedging policy to mitigate the balance sheet risk of all debt being in AUD.	3 marks 3 marks 3 marks
		Total: 25 marks

Mark scheme

Q1a

• CLM retains the flexibility to take a view on FX rates by under-hedging if desired. • The use of forwards, cross-currency swaps, and options is permitted, but the specific derivatives employed are not disclosed. • While these hedges protect against short-term price fluctuations, CLM remains exposed to longer-term price trends. • CLM adopts rolling hedges to manage foreign exchange (FX) risk up to 12 months into the future. • Balance sheet items are not hedged, which likely excludes the use of currency swaps. • Unhedged FX fluctuations could affect both revenues, margins, and covenants. • Unhedged translation of foreign currency profits, as well as assets and liabilities, can impact equity, leverage ratios, net worth, and earnings, which could, in turn, affect covenants and CLM's credit rating. • There appears to be no need for the flexibility offered by contingent payments, making options unnecessary although applying options instruments here is not outrightly wrong. • Hedge ratios are higher for near-term cash flows, as they are easier to forecast. • There is no reference to the use of natural hedges. • CLM reports that the majority of its costs are in USD, which provides some offset; however, it may be prudent to consider generating costs in GBP, EUR, and CNY, given the company's sensitivity to these currencies. • Assets and liabilities denominated in different currencies are not disclosed.	1 mark per valid point

	• With 99.8% of revenues generated abroad, CLM faces significant FX risk at the consolidated level if debt is denominated in AUD or if headquarters expenses in Australia are substantial. • Revenues are diversified across EUR, GBP, and USD, rather than being concentrated in a single currency. • Despite the hedges, residual FX risk remains: a 10% movement in USD could impact 2021 profits by 4.3%. • The sensitivity analysis does not account for the probability of such movements; complementing it with a Value-at-Risk (VaR) analysis could be beneficial. • The prevailing debt to equity ratio is 1.9x. which is a bit below the threshold limit. This suggests that it is in the best interest of the company to either pay back some of its debt or issue equity so as to maintain compliance. The company may also consider a waiver or grace period as raising equity might take time.	**Total marks: 10**
	Q1b	
	• Credit rating: This can be a public rating from an agency or an internal assessment from the counterparty. • Lagging indicators: Ratings may not promptly reflect credit quality changes as they often trail behind actual developments. • Press and industry reports: Look for mentions of CLM. Including sector reports and macro-economic analyses • Financial reports: Regularly review updated financial statements. Including Ratio Analysis (although this will be out of date if only published annually). • Debt covenants: Early warning signs could be found in CLM's debt covenants if accessible, such as those on publicly traded debt. • Counterparties may review the margin applied to CLM's debt to determine how it compares to the risk-free rate. This could provide the counterparties with an assessment of the credit quality of CLM. • Market-related measures: These are more dynamic and current but can be influenced by market sentiment and may overreact, such as: - Credit spread over risk-free rates or swaps. - Credit default swap prices for CLM. - Increased volatility in CLM's share price relative to a benchmark. - General market volatility changes, like shifts in the VIX index, indicating overall credit condition deterioration.	1 mark per valid point **Total marks: 6**
	Q1c	
i)	**Current debt-to-equity ratio (2022):** Total debt = AUD 12,412.5 million (borrowings and loans) . Total Equity = AUD 6,495.3 million Debt-to-Equity ratio = 12,412.5 / 6,495.3 ≈ 1.91x **Impact of FX rate movements (e.g., AUD appreciation of 10%):** USD Debt Effect: If the debt is partially denominated in USD, a 10% AUD appreciation will reduce the AUD value of the debt. Assume that 50% of the loan	

is in USD (AUD 6,206.25 million).

Value of new debt after 10% AUD appreciation = AUD 6,206.25 million X 0.90 = AUD 5,585.63 million.

Total other debt = 5,585.63 + 6,206.25 (AUD share) = AUD 11,791.88 million
Using the change in equity in the question, the equity is also restated to 6,085.8.
New debt to equity = 11,791.88 / 6,085.8 ≈ 1.94x

Impact on gearing: A 10% appreciation of the AUD results in a slight increase in the debt-to-equity ratio from 1.91x to 1.94x, improving gearing.

	AUDm
Loans	9,852.60
	2,559.90
	12,412.50
Split as:	
AUD	6,206.25
USD	6,206.25
10%	620.63
10% change in AUD results in equity change of:	
USD	(177.00)
GBP	(85.50)
EUR	(136.50)
CNY	(10.50)
	(409.50)
Debt after 10% change	11,791.88
Equity per Q	6,495.30
Change due to 10% AUD	(409.50)
Equity after 10% AUD	6,085.80
Due to equity	1.94

1 mark per point

Total marks: 3

ii)

Movements in AUD can have a fatal impact on foreign revenues and asset values, making it harder to service AUD debt.
The gearing calculation shows that FX movements can erode equity and increase the leverage ratio.
With cash flows in foreign operations (USD, GBP, EUR, or CNY), and debt in AUD, exchange rate fluctuations can create mismatches, leading to higher costs when converting to AUD for debt repayments.

1 mark per point

Total marks: 3

iii)

Borrow in currencies that match the assets and cash flows (e.g., USD debt for

	USD-denominated assets and revenue) to reduces the risk of FX revaluation affecting the gearing ratio and stabilize the Debt-to-Equity ratio against currency fluctuations, particularly with exposures in USD, GBP, EUR, and CNY. Use natural hedging by matching the currency of debt with the currency of operations. This will reduce the need for financial derivatives and minimizes FX exposure. CLM should consider incorporating covenants that require maintaining a certain percentage of debt in the currency of primary operations to ensure ongoing compliance with hedging policies. *This mark scheme is not exhaustive – all valid points within answers will be awarded marks. Points must be relevant to the case study to receive full marks*. **Syllabus refs: 2.1.3, 2.1.4, 2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.2.5, 2.3.2, 2.3.3, 2.3.4, 2.4.1, 2.4.2, 2.4.3**	1 mark per point **Total marks: 3**
		Total: 25 marks

QUESTION 2: CASE STUDY

Hydrocarbons Energy Corporations (HEC) specialises in the extraction of oil and natural gas from various reserves spread across Cyprus. HEC's core operations are concentrated in the Mediterranean Sea, where the development and management of oil fields play a critical role in driving its revenue.

The data below were extracted from HEC's income statements for the 31 March 2022 and 2021 financial years ended respectively.

USDm	**2022**	**2021**
Revenue (breakdown given below)	**480.00**	**420.00**
- Crude oil and natural gas sales	448.50	306.00
- Realised gains on derivative contracts	24.00	135.00
- Unrealised gain/(losses) on derivative contracts	(15.00)	(27.00)
- Miscellaneous income	22.50	6.00
Cost of sales (breakdown given below)	**(445.50)**	**(345.00)**
- Cost of operations	(292.50)	(178.00)
- Realised gains on FX derivative contracts	12.00	34.50
- Unrealised (losses)/gains on FX derivative contracts	(4.50)	1.50
- Miscellaneous costs	(160.50)	(203.00)
Gross profit	**34.50**	**75.00**
Operating (loss)/profit	**(28.50)**	**181.50**
Finance income	1.50	1.50
Finance expense	(78.00)	(67.50)
(Loss)/profit before tax	**(105.00)**	**115.50**
Income tax credit/(charge)	96.00	(16.50)
(Loss)/profit for the year	**(9.00)**	**99.00**

Revenue increased by 14% in 2022. This was achieved with higher realised oil prices that reflected the forward pricing available during the hedging period as well as increased sales volumes above those of 2021. Unlike in 2021, when there were realised gains of USD90m, in 2022, HEC was able to generate gains from its crude oil hedging contracts amounting to USD16m. From the 13,973 BOEPD (barrels of oil equivalent per day) recorded in 2021 to 14,894 BOEPD in 2022, oil and gas production increased by 7%. However, this marginal increase is largely attributed to the Russia-Ukraine conflict that disrupted market dynamics and impacted demand and supply during the final quarter of FY21/22 ending on 31 March.

Commodity price risk

Analysis at HEC has identified a significant risk to its revenue and profits. This is the risk of a decline in oil and gas prices. Both the likelihood of this risk and its potential impact have been classified as "high." To mitigate this risk, HEC has adopted risk management strategies such as:

- hedging of price risk
- renegotiating supplier contracts to lock in price
- reducing costs to maintain profit margins.

The board has approved a hedging policy that allows for hedging oil prices based on projected production levels. Under this policy, up to 90% of forecasted production for the next 12 months can be hedged on a rolling basis; up to 75% for the following 12 months; and 60% for the following 12 months, assuming all other variables remain constant. The treasury hedging policy permits the use of specific financial instruments, including:

- buying and selling call options
- buying put options
- commodity swap contracts.

The impact on pre-tax profit of a USD10 per barrel change in the price of Brent oil is shown below:

USDm	2022	2021
USD10 per barrel increase	81	76.5
USD10 per barrel decrease	(81)	(76.5)

In December 2021, HEC raised USD25m on an unsecured basis, in an 18-month crude oil prepayment arrangement. This arrangement includes a commodity collar comprising 18 separate pairs of put and call options, with a floor of USD62 per barrel and a cap of approximately USD77 per barrel. Repayment of the USD25m is in equal monthly instalments over 18 months from the sale of an aggregate of approximately 470,000 barrels of oil. HEC receives the average Brent price each month subject to a floor of USD62 per barrel and a cap of approximately USD77 per barrel.

During 2022, losses totalling USD10m were recognised within unrealised revenue in the income statement, for this financing arrangement. Interest on the USD25m finance is payable at one-month USD LIBOR plus a margin of 5.0%.

HEC did not enter into any other put options in 2022. All put options entered in 2021 matured within the 2021 financial year.

Foreign currency risk

HEC has significant borrowings and payables denominated in EUR. In addition, HEC has significant transactional currency exposures, including revenues and costs denominated in Euro and Canadian Dollars (CAD). HEC manages its Euro currency risk by matching Euro-denominated financial assets with Euro-denominated financial liabilities. The following table shows the sensitivity impact of HEC's profit before income tax to a change in the Euro, with all other variables held constant.

USDm	2022	2021
10% appreciation of EUR	(10.5)	(12)
10% depreciation of EUR	10.5	12

QUESTION 2

a.	Evaluate the effectiveness of HEC's commodity and foreign currency risk management approaches.	15 marks
b.	Recommend and justify **FOUR** appropriate key performance indicators (KPIs) for inclusion in HEC's commodities and foreign exchange risk management policies.	10 marks
		Total: 25 marks

Mark Scheme
Q2a

Currency risk

- Apart from the natural hedging of Euro financial assets and liabilities, no other currency hedging is mentioned. As depicted from the sensitivity of moves in the EUR/USD exchange rate it seems appropriate to hedge against USD weakening. However, if warranted by the policy, HEC may be taking a view on its direction which may increase assumed risk. HEC is still exposed to moves in the EUR/USD rate, though as a 10% move will affect pre-tax profits by about 10%.
- USD depreciation would adversely affect EUR liabilities that are not hedged naturally, and which must be revalued periodically, and that could affect ratios and covenants involving equity. USD appreciation also has an adverse effect – on EUR and CAD revenues, so consideration should also be given to hedging this risk
- HEC relies on natural hedges to match Euro financial assets and liabilities. However, the strategy for hedging non-financial assets and liabilities is not mentioned and this can have a significant bearing on the financial position of the Company.
- Exposure to other currencies has not been reported. However, exposure to CAD is significant and should be reported. Hedging consideration should also be made in respect of material CAD exposures. HEC should quantify its exposure to other currencies, especially CAD given that it is a significant exposure and since the hedged EUR leaves a large residual exposure.

Commodity risk

- HEC implements rolling hedges on oil price risk for decreasing percentages of expected production up to three years ahead.
- Rolling hedges mean HEC is protected against short-term price moves but HEC is more exposed to longer-term price trends.

1 mark for each valid point

- It seems HEC permits the buying and selling of calls, but only the buying and not selling of puts. This reduces flexibility to hedge.
- The exercise of sold puts against HEC would mean HEC buys oil and is even longer the commodity than its production.
- HEC is still exposed to significant losses if the oil price falls, despite the hedges.
- HEC has assessed that the likelihood of oil price moves occurring is High Risk and the risk of potential impact is also recognised to be High. "High" might be a qualitative term and biased by subjectivity.
- HEC has observed that the oil forward price curve was in their favour resulting in realised hedging gains in both years. However, the realised gain was lower in 2022 (USD16m) as compared to 2021 (USD90m)
- HEC did not have any open/long put options as at 2021-year end as all put options matured during the year. These options would have profited from price falls, but there is no discussion of the hedging that was in place.
- The hedges were profitable the previous year, providing realised profits of USD90m and unrealised losses of USD18m.
- With the recent significant increase in the market price of oil ($125 per barrel), its rolling hedges are likely to be significantly loss-making, but these will be offset to some extent by significantly higher sale prices of its oil.
- The only current hedge mentioned is the collar structure, comprising a series of sold calls struck around USD77 which finance a series of bought puts struck at USD62.
- The collar protects 470,000 barrels of oil, while oil (and gas) production the previous year was 13,973 Boepd (barrels of oil equivalent per day), so the hedge covers less than 32 days of production using 2022 figures. This shows that the residual risk is quite significant although there are rolling commodity hedges that provide some protection. A lower coverage day implies higher risk.
- The collar is also used as a source of unsecured financing: USD25m at USD LIBOR + 5.0%.
- There is no mention of hedging against falls in the price of natural gas. This may be a significant risk and warrants more analysis.

Total marks: 15

Q2b

Reasons for including KPIs in HEC's commodities and foreign exchange risk management are as follows:

- Measure the reduction in risk and the success of risk management actions taken as highlighted below:
  - Both commodity and FX residual risk after the hedges is sizeable compared to profits and warrants use of KPIs.
  - Last year's hedging seems to have been unable to protect against a drop in revenues and does not mitigate significant risk.
- KPIs align treasury to corporate and board objectives.
- KPIs depicts how treasury is performing against set objectives and targets.

	• Provides an opportunity for treasury to demonstrate value it is creating for the business and how it is helping other departments. • Potential to improve control and processes as HEC could consider using Value at Risk (VaR) rather than just sensitivity resulting in a more comprehensive analysis. • Failed KPIs can become Key Risk Indicators (KRIs) and facilitates prediction of future potential problems and act as early warning signals. Possible KPIs to show how commodities and FX risk management is performing are: • Reduction in revenue volatility/EPS due to hedging • Accuracy of forecasts for future prices • The average hedged price v. benchmark/budget rate • Hedge performance: do nothing v hedge • Hedge effectiveness: possible future change in fair value of hedge/fair value of hedged item Hedge accuracy: gain/loss on hedge compared to gain/loss on hedged item • Hedge percentage for different durations in the future: hedged amount/exposure amount • Cost of hedging • Amount naturally hedged/amount hedged using financial instruments • Bank bidding performance *This mark scheme is not exhaustive – all valid points within answers will be awarded marks.* **Syllabus refs:** 2.1.1, 2.1.3, 2.1.4, 2.2.1, 2.2.2, 2.2.3, 2.2.5, 2.3.2, 2.3.3, 2.3.4, 2.4.1, 2.4.2, 2.4.3, 2.5.2, 2.5.3	1 mark per point **Total marks: 10**
		Total: 25 marks

QUESTION 3: CASE STUDY

Jerry Keypoint Beverages (JKB) is a beverages retailer based in Denmark and operating across the Nordic region. It operates 129 supermarkets and provides online shopping via a retail website. The supermarkets sell beverages, clothes and fuel from petrol stations adjacent to the larger stores. Some of JKB's stores operate in-house cafes as well.

JKB has grown organically, opening an average of six new stores per year, over the past 10 years.

Risk management

JKB's risk management framework identifies, evaluates, mitigates and monitors risks which threaten its priorities. The framework involves several control functions:

- the board of directors maintains sound risk management and control systems
- the audit committee sets the risk management framework and maintains oversight of risk monitoring
- risk and internal audit coordinates risk management activity by reviewing risk mitigation plans and preparing risk reporting.

As part of its risk management process, JKB has identified the principal risks facing the business. These are listed below, categorised by change in risk over the last 12 months.

Increase to the risk:

- market competition and the impact on margins, as there is considerable promotional activity in the sector.

No change to the risk:

- business interruption caused by a major incident
- customers are not provided with the shopping experience they want in store or online
- a security breach which leads to loss of customer, employee or company confidential data
- availability of funding and liquidity
- products sold are unsafe or not of the integrity that customers expect
- injury or harm to customers or employees
- failure to attract, retain or motivate talented colleagues
- changing regulation as JKB operates in a highly regulated environment.

Emerging risks

JKB's risk management process incorporates the identification and management of emerging risks, alongside known principal risks. Emerging risks currently being monitored include:

- sustainability and ethical trading
- environmental and climate change
- continued innovation in technology.

The board of JKB is concerned about several issues which have featured prominently in the media recently and are impacting the market. These include:

- product contamination
- health and safety
- supply chain failure due to a natural disaster, pandemic, war or terror attack.

QUESTION 3

a.	Recommend and justify improvements for JKB's risk management framework.	13 marks
b.	Recommend and justify a business continuity plan that JKB should have in place to protect itself against the range of issues and events outlined in the scenario.	12 marks
		Total: 25 marks

Mark scheme

Q3a

• There is no mention of operational management involvement in risk management They could identify operational risks from the bottom-up They could also implement risk mitigation • JKB could establish an enterprise-wide risk management system It is not clear if the company manages the interaction between risks or if they are managed individually • JKB's process seems incomplete There is no discussion of risk reporting and feedback on the effectiveness of the risk management to enable continuous improvement JKB could establish clear KRIs, KPIs and KCIs to evaluate the effectiveness of risk measures They mention identification of risks but not a full risk register, nor a risk heatmap/matrix giving impact and likelihood of risks occurring There is no mention of timing of updates and how often risks are reviewed • It is not possible from the list of significant risks if they are significant because the impact or the likelihood is high, or both An analysis of the velocity of risk would help to identify which of the significant risks are most immediate, or which could manifest quickly The company provides little information about COVID-19 even though it has been ongoing for four years or for the war in the Ukraine which has been ongoing for two years. There is no mention yet of implementing contingency plans to meet the crisis. JKB's risk and internal audit prepares risk reports, however there is no mention made if these reports are reviewed and what improvements or measures are taken for new risks identified.	1 mark per point **Total marks: 13**

Q3b

Establish an emergency response team • Responsible for implementing the business continuity plan led by senior management. • Develop a communication plan for notifying stakeholders, including customers, suppliers, and regulatory bodies. • Plan for continuity of leadership in the absence of key decision-makers	

Prioritise personal safety for employees and customers

- For product contamination, have a recall plan ready, including methods for tracing affected products.
- Maintain inventory buffers or safety stock to continue operations if a supply chain disruption occurs.
- Additional safety measures and equipment such as temperature scanners, hand sanitisers and protective screens, etc
- Provide an updated training to staff on business continuity plan and conduct drills to ensure everyone knows their role in a crisis, and in the face of a disaster, provide further training based on the actual situation, how to protect themselves, etc.
- Prepare for post-crisis recovery by establishing plans to restore normal operations swiftly. This might include securing emergency funding or activating secondary suppliers.
- Clean workplaces and delivery vans regularly
- Offer remote working solutions to staff who do not need to be physically present
- Providing wellbeing support to staff to cope with the crisis
- Provide additional training and support to security staff
- Maintain effective communication with employees, customers and stakeholders
- Regular updates on shopping practices in stores and online
- Provide open and clear communication to employees and customers on developments and steps to follow
- Communicate through diverse channels, including social media
- Briefings to store management on key decisions
- Engage with government and industry bodies to help formulate the response to the pandemic
- Increased demand for on-line sales
- Possible need for more delivery vans and drivers to cope with demand
- Increase capacity for in-store collection
- Potentially capacity issues with the web interface due to increased traffic
- Likely fall in fuel sales volumes if customers' movements are restricted
- Potential fall in clothing sales with lower footfall in the stores
- Having to sell unsold inventory at lower prices will reduce margins
- Additional security staff are required to manage customer queues and access to stores
- Shortages of stock
- Customer stock-piling food or particular items
- Possible disruption to supply chains
- Restrictions on movement of people to harvest crops
- Change to alternative suppliers and alternative delivery routes considering the actual nature of the disaster.
- Suppliers may need financial support so JKB could pay them more promptly, but this will negatively impact JKB's working capital
- Additional costs for hiring temporary workers or paying employees unable to attend work
- Increased risk of greater funding needs during the crisis
- Pressure on working capital

1 mark for point

	• Review the existing business plan and strategy • Plans for further expansion may have to be postponed • Review of lessons learned when the crisis is over • Track and monitor decisions made in response to the situation. *This mark scheme is not exhaustive – all valid points within answers will be awarded marks.* **Syllabus refs: 2.1.2, 2.1.3, 2.1.4, 2.2.1, 2.2.3, 2.2.4, 2.2.5, 2.3.2, 2.3.4, 2.4.4, 2.5.1, 2.5.2, 2.5.3**	**Total marks: 12**
		Total: 25 marks

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