ACT PRACTICE PAPER 2

Diploma in Treasury Management (AMCT)

Unit 2: Risk management for treasury

This is a practice paper for Unit 2 of the Diploma in Treasury Management (AMCT), based on the 2022 syllabus.

INTRODUCTION

This practice paper has been produced by the Awarding Body Department at the Association of Corporate Treasurers (ACT) to assist students in their preparation for the Diploma in Treasury Management assessments. It contains a practice exam for the specified unit as well as the answers. Ideally, students should have completed the majority of their Diploma in Treasury Management studies for Unit 2 before attempting this practice paper.

Students should allow themselves 180 minutes to complete the exam plus an additional 15 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 practice paper 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 exam.

To prepare properly for the examination, 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 that as well as testing theory expects application to practice at an operational level.

The best way to approach written assessments 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 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 practice 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 chose to only answer two	50
Total	3	100

Under exam conditions, 3 hours (180 minutes) is allowed for each of the Diploma in Treasury Management assessments plus an additional 15 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 practice paper, you may use a non-programmable scientific calculator.

In order for you to determine how well you have performed, exemplar answers are listed at the end of this paper. There are also references to the relevant Learning Outcomes if you need to revisit the associated material.

SECTION A – 50 marks

Answer ALL questions in Section A. This questions tests 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. You are required to present your answers in a report format.

Total available for Section A: 50 marks

Business activities

Groen Staal (GS) is a Belgium-based producer and distributor of steel and steel products. It operates worldwide through subsidiaries grouped into four business divisions.

1. Steel, mainly located in Charleroi, Belgium, produces high-quality flat steel products which are supplied to customers and to the Metal Forming Division.
2. Specialist Steel operates eight major production facilities in Europe and Argentina. It produces premium steel products.
3. Metal Engineering produces railway track material products and specialist components such as switches and applications for high-speed rail, in addition to signalling, safety features and offering maintenance. It also produces wire rod products, seamless tubes. It operates manufacturing sites in Europe, North America, Asia, Africa and Argentina and Australia.
4. Metal Forming provides customer-specific special sections and tubes, cold-rolled, special and precision thin strips and one-stop solutions. It has production facilities in Europe, the North American Free Trade Area (NAFTA) region, Argentina, South Africa and China.

The table below gives key data, customer distribution and the markets for each division (2022, revenues and segment assets in EUR millions).

	Steel	**Special Steel**	**Metal Engineering**	**Metal Forming**
Key figures				
Revenue	2,533	1,789	1,924	1,502
EBITDA	478	364	511	291
Segment assets	3,270	2,717	2,199	1,420
Markets				
EU	90%	53%	57%	79%
NAFTA	3%	15%	17%	11%
Asia	2%	17%	12%	3%
South America	1%	7%	2%	2%

Rest of the world	4%	8%	12%	5%
Customers				
Automotive	37%	27%	14%	51%
Aerospace	-	12%	-	-
Energy	25%	12%	19%	2%
Building / Construction	9%	4%	4%	24%
Mechanical engineering	5%	19%	4%	9%
White goods / Consumer goods	4%	12%	1%	5%
Railway systems	-	-	52%	-
Other	20%	14%	6%	9%

Business strategy

GS's five-year strategy comprises the following objectives:

- Target that 40% of revenue will be generated in non-European markets
- The key growth sectors of mobility (automotive, railway, aerospace) and energy should be generating around 70% of the Company's revenue by 2023. It is currently 63%
- The transformation from a steel company to a technology and capital goods company will be driven forward. The steel segment's share of the Company's revenue will be reduced to 29%; by 2023.

Extracts from the Company's financial report

Income statement		
EUR '000	**2022**	**2021**
Revenue	7,748	7,833
Cost of sales	(6,042)	(6,242)
Gross profit	**1,706**	**1,591**
Distribution costs	(720)	(683)
Administrative expenses	(427)	(422)
Other operating income, net	63	135
Profit from operations	**622**	**621**

Finance costs, net	(96)	(103)
Profit before tax	**526**	**518**
Income tax	(104)	(101)
Profit for the year	**422**	**417**

Extracts from the Balance sheet

EUR ('000)	**2022**	**2021**
Non-current assets	**5,874**	**5,378**
Of which, Property, plant and equipment	4,205	3,730
Goodwill	1,081	1,031
Current assets	**3,931**	**3,866**
Of which, Inventories	2,081	2,084
Trade receivables	1,059	1,168
Total assets	**9,805**	**9,244**
Non-current liabilities	**3,335**	**3,083**
Of which, Pensions and other employee liabilities	860	887
Long term debt	2,340	2,103
Current liabilities	**2,513**	**2,579**
Of which, Trade payables	1,418	1,542
Financial liabilities	629	623
Total liabilities	**5,848**	**5,662**
Equity	**3,957**	**3,582**
Of which, Share capital	983	943
Retained earnings and other reserves	2,974	2,639
Total equity and liabilities	**9,805**	**9,244**

Risk management

Risk management covers both the strategic and the operational levels.

- Strategic risk management evaluates and safeguards strategic planning for the future. Strategies are reviewed to ensure conformity with the company's objectives to ensure value-adding growth through an optimum allocation of resources
- Operational risk management is based on a procedure of identify, assess, evaluate, manage and report . The assessment of identified risks is implemented using an evaluation matrix comprising nine fields that assesses possible losses and the probability of occurrence.

The board is responsible for the internal control and risk management system while local management refines and adapts the system to meet the requirements of their own country.

The Internal Audit department independently monitors operational and business processes and the internal control systems and, as an independent, in-house department, has full discretion when reporting and assessing audit results.

Foreign Exchange risk

Hedging is provided through natural offsets where possible and then through derivatives. GS hedges budgeted foreign currency transactions 12 months ahead using a hedging ratio (i.e. the amount of forecast exposure that has been hedged) between 50% and 100% with lower hedging ratios for cashflows further in the future.

Net unhedged foreign exchange positions and value-at-risk at year end was:

EUR millions	Unhedged position **(EURm)**	Annual VaR 95% year (EURm)
USD	(104.1)	15.8
GBP	41.2	5.1
ZAR	21.3	4.6
CAD	23.2	3.6
Other	13.2	2.7
SEK	(19.5)	2.2
CHF	13.0	2.2
PLN	(2.9)	0.4

The resulting portfolio risk is EUR12.3m (2021: EUR29.5m) after taking correlation between different currencies into account.

GS had the following currency derivatives outstanding at year end:

Forward foreign exchange transactions	**2022**	**2021**
Nominal value (EUR million)	578.5	630.6
Market value (EUR million)	1.6	33.5
Maturity	<1 year	<1 year
Designated as hedge accounting	115.4	226.1
Cross currency swaps		
Nominal value (EUR million)	97.9	48.9
Market value (EUR million)*	5.9	(2.7)
Maturity	<=5 years	<=5 years
Designated as hedge accounting	0.0	0.0

*Figures in brackets denotes a loss

Interest rate risk

GS's view is that the primary objective of interest rate management is to optimise interest expenses while taking risk into consideration.

GS differentiates between:

- cashflow risk: the risk that interest expenses or interest income will undergo a detrimental change for variable-interest financial instruments
- present value risk for fixed-interest financial instruments.

The risk exposures are summarised in the table below:

	Position EUR million	Weighted average interest rate	Duration (years)	Cash flow risk 1% increase in interest rate EUR million	Present value risk Sensitivity to a 1% increase in interest rate EUR million
Assets	747.0	0.56%	1.02	8.3	(6.0)
Liabilities	(2,908.5)	2.30%	1.90	(17.7)	91.6
	(2,161.5)			(9.4)	85.6

GS had the following interest rate derivatives outstanding at year end:

Interest rate swap transactions	2022	2021
Nominal value (EUR million)	319.3	318.9
Market value (EUR million)	(4.9)	(7.3)
Maturity	<4 years	<4 years
Designated as hedge accounting	178.5	178.9

Q1	(a) Evaluate the key financial and non-financial risks to which GS is exposed. (b) Recommend and justify improvements to GS's risk management framework. (c) Evaluate the effectiveness of GS's foreign exchange and interest rate risk management policies. (d) Analyse the additional risks GS incurs as a result of entering into swap transactions. Within your answer, recommend appropriate techniques that GS can utilise to mitigate these risks.	16 marks 10 marks 14 marks 10 marks 10 marks
		Total: 50 marks
Q1 answer	(a) **Key risks** • Given the role of treasury, the nature of risks and their significance is heavily shaped by the strategic direction of the company. Therefore, the overarching risk appetite, tolerance and strategic objectives of GS will be the key drivers of the current and future risks that treasury must manage. • Answers could be laid out as a risk register or supported with a discussion on the likely impact / probability of each risk.	16 marks

	• Economic cycle and conditions
	  • There is likely to be a reduction in demand for cars, construction and government spending when the economy is weak. Conversely government spending might increase to support the economy even if that means more government borrowing.
	• Raw material prices and energy costs
	  • The GS uses non-renewable inputs such as iron ore, coke and coal. Given the current market conditions prices are likely to be highly volatile and GS could face supply chain issues.
	• Credit risk of business counterparties is likely to deteriorate when the economy worsens. As interest rates rise and we see input price inflation there could also be worsening debtor performance and cashflow.
	• Access to funding
	  • GS needs funding for its capital-intensive activities
	  • Some growth has been achieved through acquisition, evidenced by the high level of goodwill. However, have synergies been achieved and integration wholly successful?
	  • Writing-off goodwill faster than expected will reduce reported profits
	• Environmental laws and regulation
	  • The company may be exposed to environmental liabilities as a result of its operations. Better answers would discuss the implications (financial and reputational) of ESG risks.
	• Foreign exchange risk
	  • Many costs are in dollars but revenues are from activities in Europe.
	  • Better answers would discuss the FX risks in terms of: Translation (B/S and P&L), Transaction (pre, post and extended), Economic and supply chain (hidden) FX risks.
	• Additional risks that could be explored include: interest rate, geopolitical, disease, commodity, central bank monetary & fiscal policies, human resources, energy costs and supplies etc.	

	(b) **Risk Management Framework** A total of 10 marks are available. 2 marks for each relevant and well developed point on the up to a maximum of 10 marks • There is no mention of a Risk Committee reporting to the Board to take responsibility for risk management. There is a	10 marks

	need for risk appetite and tolerance to be established which have been derived from wide stakeholder consultation.
	• There is no mention of aggregation of the risks from all of GS's operational business
	  • The Risk Committee should do this
	  • It can also manage the risk appetite for the company as a whole
	  • It can take responsibility for the company-wide risk map and prioritise the risks from the different businesses (including tracking changes in the impact and probability of risks)
	  • It can identify and manage the interrelationships between risks
	  • It can delegate tasks to treasury and other parts of the business using policies and procedures
	• There is an extra layer of scrutiny from internal audit as best practice recommends
	• The process is to: identify and analyse, assess, manage, document, and monitor, but there is no mention of feedback
	• There is no detail about evaluation of risks: potential impact and probability of occurrence, and the combination of these to form the risk level; this includes the stated methodologies and techniques that should be used
	• Giving local managers some autonomy increases flexibility at the risk of not adhering to GS's procedures
	• There should be greater clarity on permitted instruments and counterparty limits
	• Establish KRIs, KPIs and KCIs for the risks
	  • Revenues from the key growth sectors of mobility (automotive, railway, aerospace) and energy
	• Establish a mechanism to review and feedback the outcomes of the KPIs to the Risk Committee.
	
	(c) **Effectiveness of foreign exchange and interest rate risk management policy**
	
	A total of 14 marks are available. Up to 2 marks for each relevant and well developed statement with justification linked to GS's circumstances, up to a total of 14 marks.
	
	Foreign exchange risk
	
	• Most revenues are generated in EUR, matching the reporting currency
	• The FX policy leaves scope for unhedged positions
	  • Hedging of exposures for the next 12-months ranges from 50% to 100%
		
		14 marks

    - This range allows for a large degree of discretion
    - The range is not related to the materiality of exposure to each currency
    - The amount of derivatives designated as hedges has fallen in the past year, but then so has the portfolio risk of net unhedged foreign exchange positions, so it seems GS has less FX risk in 2022 compared to 2021
    - Better answers would discuss the net (correlated VaR) position of FX exposures and how the mix might change depending upon the strategic direction of the business and sales flows.
    - It should be noted that Actual FX hedge ratios beyond 12 months are not defined by GS
  - The FX derivatives are currently showing a positive mark-to-market
    - On hedges, this would suggest the underlying position is negative and the hedge is working
- GS only use derivatives with linear payoffs: forwards and cross-currency swaps
  - The company only hedges known cash flows, not contingent or uncertain payments
    - No explanation is provided for this policy
  - Options not permitted even though these would provide flexibility at a cost
- Cross-currency swaps are only for less than five years even though there are long-term assets overseas.
- Answers should also consider how assets and liabilities are accounted for.

Interest rate risk

- The interest rate policy also leaves scope for unhedged positions
  - No numbers are stipulated for the amount of hedging to be applied
  - There are only EUR319m of interest rate swap positions compared to EUR2,161m net liabilities
    - The remaining exposure seems to be largely variable rate, given the sensitivity to increases in interest rates so it seems GS is keeping interest expenses low by being exposed to the short end of the yield curve in a positive curve environment, rather than hedging
- Again, the interest rate swaps are for less than five years

- This could result in a maturity mismatch and an exposure to residual interest rate risk, though there is no information on the maturity of the liabilities.
- Given the current economic conditions, the current policy exposures the company to a lots of risk and is perhaps a gamble that current inflationary pressures will reduce and rates fall in a few years.

10 marks

(d) **Additional risks through entering swaps**

A total of 5 marks are available. Up to 1 mark for each relevant and reasonable well developed point

- Reducing market risk through derivatives increases counterparty risk, operational risk and liquidity risk
- Counterparty risk
    - GS will have the risk of the counterparty for the duration of the swap, though exposure only exists if GS is in the money
        - Mark-to-market data suggests valuation is in GS's favour at year end so they have the risk that the counterparty defaults and they are not able to realise the profit
    - Vanilla swaps can be traded on central counterparties with margining though GS, as a non-financial counterparty could be exempt from posting collateral if the notional amount is below the EMIR clearing threshold
        - However, bank counterparties are likely to ask for collateralisation to mitigate their credit risk and reduce their capital requirements: this would especially apply to cross-currency swaps where the initial and final exchange of principal leave both parties exposed to relatively volatile FX risk
- Banks will also charge a credit value adjustment to compensate for the risk of Operational risk
    - Systems to transfer/receive margin or collateral
    - They will be exposed to the risk that the counterparty values the transaction in OTC deals
- Liquidity risk
    - GS will need cash or acceptable securities to transfer as collateral if mark-to-market goes against them.
- Answers should also discuss the LIBOR transition and the implications of any existing swaps tied to IBOR will have upon GS. The move to RFR will also have basis risk implications along with a change in the cash flow pattern.

Better answers will also highlight the added uncertainty of swaps being linked to a RFR given that the settlement rate will be a weighted average of the RFR for the settlement period. Therefore, the final payment / receipt will only be known at the end of the settlement period.

Mitigation against risks arising from entering swaps
A total of 5 marks are available. Up to 1 mark for each relevant and reasonable well-developed point

- Counterparty risk
  - Limiting counterparties to those with a minimum credit rating
  - Set individual counterparty credit limits
    - Exposures are dynamic as market prices move, so the limit can be set as a percentage of maximum potential future exposure based on volatility and the tenor of the swap
      - The current short maximum tenor of swaps (4 years) limits the magnitude of potential price moves
  - Put in place an ISDA Master Agreement
    - Sets out the legal jurisdiction for disputes
    - Outlines close out netting terms to net all exposures with a single counterparty
  - Risk of placing collateral with a counterparty
    - Ensure the collateral is held in a separate, segregated account in case the counterparty fails
- Operational risk
  - Set up a Credit Support Annex to the ISDA Master Agreement
    - A two-way agreement means both parties have to post collateral if required
    - Imposes daily mark-to-market valuation
    - Limits the threshold amount of collateral to be transferred
  - Outsource collateral management
- Liquidity risk
  - Have a store of cash or cash equivalents
    - These are lower yielding so returns to GS are less
  - There may be a requirement for increased margin if GS were downgraded

    This would happen at the time when GS has difficulty and probably needs cash

Total: 50 marks

SECTION B – 50 marks

Answer TWO of the following THREE questions. Questions 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. Candidates are expected to be able to synthesise knowledge from different elements of the syllabus rather than be tested on discrete areas.

Total available for Section B: 50 marks

Section B, Question 1 Case Study

Business activities

Counties Airports Limited (CAL) operates three airports in the United Kingdom: Birmingham (BIR), Southampton (SOU) and Liverpool (LPL). Combined passenger numbers in 2018 were 33.6m.

CAL generates income from two sources:

a. aviation income from fees charged to airlines for the use of airport facilities

b. non-aviation income from retail concession fees, car parking income, property rental income and income from the provision of operational facilities and utilities.

Results from operations are given in the table below:

GBP millions	**2022**	**2021**
Revenue		
Aviation income	244.2	232.4
Retail concessions	98.6	86.3
Car parking	91.3	82.6
Property and property related income	29.5	28.5
Other	40.2	37.5
Total revenue	**503.8**	**467.3**

The origin and destination (O&D) market forms 99% of CAL's traffic, with most aviation revenues driven by low-cost carriers. O&D passengers provide resilient stable revenues as they are generally more flexible regarding airport choice and are willing to use CAL's regional airports. CAL's biggest five airline carriers account for 75% of total passenger volume, with one low-cost carrier having a 48% share of BIR's total passenger volume and 82% of SOU's passenger volume.

Business strategy

CAL's strategy focuses on three key areas:

(i) growing passenger traffic across its airports. The airports serve 168 routes with a spread of over 50 airlines including low-cost carriers, full service carriers and charter carriers. CAL will ensure pricing tariffs retain the low-cost carriers and encourage airline customers to increase the frequency of flights, increase aircraft size and introduce new routes. CAL is committed to broadening the route base to new markets such as Delhi, Beijing and New Orleans, and will target key overseas markets to generate inbound tourism to its airports

(ii) continuing its successful strategy to accelerate the growth of BIR

(iii) completing the transformation programmes for BIR and SOU to unlock further capacity and growth opportunities. CAL is investing GBP600m over the period until 2026 into BIR to reconfigure and expand Terminal 1, and improve taxiways and the number of aircraft stands. Expansion at SOU is expected to take place until 2030 at a total cost of GBP270m. The transformation comprises construction of additional check-in desks and commercial space; a new passenger arrivals building, and new taxiways to speed up access to the runway.

Key financial statements

Consolidated Income Statement for the year ended 31 December

GBP millions	**2022**	**2021**
Total revenue	**503.8**	**467.3**
Expenses		
Employee benefit costs	(112.7)	(104.5)
Depreciation and amortisation	(82.6)	(78.5)
Other gains and losses	4.2	6.4
Other operating charges	(193.6)	(185.3)
Operating profit	**119.1**	**105.4**
Gains and losses on sales and valuation of investment properties	2.5	9.5
Net finance charges	(44.1)	(44.5)
Profit before tax	**77.5**	**70.4**
Income tax	(5.9)	(0.3)
Profit / (loss) for the year	**71.6**	**70.1**

Consolidated Balance Sheet as at 31 December

GBP millions	2022	2021
Non-current assets		
Property, plant and equipment	1,416.7	1,395.4
Investment property	362.0	384.8
Goodwill	99.8	99.8
Investments in associates	9.0	7.9
Intangible assets	26.7	28.2
Deferred tax assets	11.1	6.2
	1,925.3	1,922.3
Current assets		
Inventories	1.3	1.3
Trade and other receivables	57.8	45.4
Cash and cash equivalents	10.0	0.2
	69.1	46.9
Total assets	**1,994.4**	**1,969.2**
Equity		
Share capital	190.0	190.0
Share premium	412.3	412.3
Retained earnings	322.9	350.9
	925.2	953.2
Non-current liabilities		
Borrowings	632.7	686.0
Retirement benefit liabilities	62.8	31.7
Other non-current liabilities	7.3	7.7
Deferred tax liabilities	141.4	156.4

	844.2	881.8
Current liabilities		
Borrowings	80.5	0.0
Trade and other payables	117.7	114.9
Deferred income	14.7	11.9
Current tax liabilities	12.1	7.4
	225.0	134.2
Total equity and liabilities	**1,994.4**	**1,969.2**

Extracts from CAL's annual report

Borrowings

CAL actively manages its exposure to interest rate risk by determining the optimum profile and mix of funding between fixed and floating rates that is most appropriate to its cashflows, up to a maximum of 90% fixed. Where necessary, CAL uses derivative financial instruments to generate the desired interest rate profile, but there are no instruments in place at year end.

Borrowings comprise bank loans, bonds and other loans as follows:

GBP millions	2022	2021
Bank loans	80.5	53.6
Bonds	481.8	481.4
Other borrowings	150.9	150.9
	713.2	685.9

Bank loans comprise GBP80.5 of a GBP180.0m senior secured revolving credit facility. CAL also has access to GBP6m of overdraft facilities. CAL has two outstanding GBP secured bond issues: 4.125% due 2025 and 4.75% due 2035. The bonds are rated BBB+ by Fitch and Baa1 by Moody's. Other debt consists of unsecured shareholders' loans GBP150.9m bearing 12% interest due 2056.

CAL is subject to two financial covenants on its borrowings:

- interest coverage ratio (EBITDA to net finance charges) should not fall below 1.40 to 1
- leverage ratio (net debt to EBITDA) should not exceed 7.50 to 1.

The interest rate profile of financial liabilities is given in the table below:

GBP millions	**2022**	**2021**
Fixed rate financial liabilities	632.7	632.3
Floating rate financial liabilities	80.5	53.6
	713.2	685.9
Weighted average annual interest rate	6.26%	6.26%
Weighted average period for which interest rate is fixed	18y 6m	19y 6m

The result of an increase in interest rates of 1% per annum is as follows:

GBP millions	2022	2021
Impact on income statement	(0.7)	(0.6)
Impact on equity	0.0	0.0
	(0.7)	(0.6)

The maturity analysis of borrowings is as follows:

GBP millions	2022	2021
In one year or less, or on demand		
Bank loans	80.5	-
In more than one year, but not more than two years		
Bank loans	-	53.6
In more than two years but not more than five years		
Bank loans	-	-
In more than five years		
Bonds	481.8	481.4
Other borrowings	150.9	150.9
	632.7	632.3
Total borrowings	713.2	685.9

Liquidity risk

CAL's policies limit the amount of borrowings maturing within 12 months to 35% of gross borrowings less cash and cash equivalents.

All cash and cash equivalents are held on short-term deposit. The cash balances attract interest at floating rates.

Q1	(a) Analyse the key risks that CAL should monitor and manage as a priority. (b) Recommend and justify appropriate actions CAL would take in relation to its debt and liquidity management, in the context of the current quality of its related risk management and its covenant constraints.	10 marks 15 marks
		Total: 25 marks
Q1 answer	(a) **Key risk factors** A total of 10 marks are available: 1 mark for each reasonable and relevant point, up to a maximum of 10. Candidates may offer additional risks to those listed below, so judgment is required as to whether they are key risks. Answers could initially produce a risk register, that outlines all of the risks the company faces. Then using a judgment on probability/impact of each risks. Note that better answers will determine which ones are within the scope of treasury and which ones are not. Those that are not answers could highlight the need to put in place business continuity plans and sufficient financial / operational headroom. Answers should then provide a detailed analysis of the top 4 of risks (ie those the treasurer will prioritise / can influence). Risks below are indicative and any well justified risks will be given equal consideration. 1. Liquidity risk • CAL has high capex requirements, an extra GBP870m over the next seven or eight years, so will need to be able to raise new finance while servicing existing debt 2. Interest rate risk • Interest rate sensitivity is GBP0.7m per 1% change in interest rates • 89% of borrowings are fixed rate	10 marks

- Borrowings are in GBP; all assets seem to be in GBP

3. FX and commodity Risk
    - Likely have around 30-40% of operating costs as fuel costs, that will be incurred in USD.
    - Given GBP revenues, there will be significant FX and commodity price risk
    - Careful analysis is needed of competitor hedging policies as it will impact their competitive and financial position
    - FX and commodity changes could impact key metrics / covenants
    - FX and commodity prices are very volatile and likely continue to see changes in FX rates due to inflationary pressures in the UK (likely higher than in the US)
4. Economic factors
    - Cost of living crisis
    - Ongoing global tensions such as Russia's invasion of Ukraine
    - Interest rates uncertainty
    - A weak GBP might deter leisure travelers from going overseas
    - This could be the wrong time to be undertaking the transformation programme
5. Reliance on a few major airline customers
    - There is heavy business concentration on business from the top five airlines, and especially the single largest carrier
        - Exposed to airlines' actions, industrial disputes or financial situation
6. Reduction of passenger demand
    - Economic slowdown in the UK
    - Leisure travel, especially on low-cost carriers, is price sensitive
        - Prices are vulnerable to fuel costs; air passenger duty;
7. Threats to security and terrorism
    - Any additional security measures could lead to delays and limitations on airport capacity
8. Business interruption
    - The airports are exposed to the risk of accidents and adverse weather conditions
9. Competition from other airports

- There may be direct price competition or competition from an increase in capacity at other airports

10. Delivering on the transformation programmes
    - These are a major part of CAL's growth strategy
    - Delays would cause reduction in revenue and potentially additional costs
11. Environmental risk
    - The airports are subject to regulations on air quality, noise and other pollution, and it is possible these can change
    - There are significant pressures on airlines from stakeholders to reduce their environmental impact and as such Airlines are increasingly subject to protests and regulatory actions
    - Given the increased focus on green / sustainable investing, CAL might have greater trouble competing for capital than other sectors.
12. Cyber risk
    - Increased technology usage: electronic baggage tags, remote check-in, biometric immigration controls
    - Air-traffic control data-links with aircraft.

(b) **Debt and liquidity management**

15 marks

A total of 15 marks are available. 1.5 marks for each relevant and reasonable point with justification, up to a maximum of 15 marks

- CAL's debt portfolio seems well managed
  - Funding sources are diversified
    - 68% bonds, 11% bank loans, 21% shareholders' loan
  - There is low sensitivity to changes in interest rates
    - 89% of debt is fixed rate
  - Assets are matched to liabilities
    - Debt is long-term: average maturity is 18 years 6 months, matching the long-term nature of the airport assets
  - Debt maturities are spread out
    - 89% of debt matures after five years
  - Borrowings match the currency of the assets
    - It looks like liabilities and assets are in GBP
  - CAL has an investment grade credit rating
    - BBB+ Fitch and Baa1 Moody's
  - The bonds are secured, reducing borrowing costs compared to unsecured debt

- The Company is well within its (loose) covenants.

	2022	2021
Operating profit	119.1	105.4
Depreciation and amortization	82.6	78.5
EBITDA	201.7	183.8
Net finance charges	44.1	44.5
Interest coverage ratio	4.6	4.1
Total debt	713.2	685.9
Cash and cash equivalents	10.0	0.2
Net debt	703.2	685.7
Leverage ratio	3.5	3.7

Note otehr gains and losses and gains on investment properties have been excluded as an assumption has been made they are not sustainable. Answers should not be penalized if included.

- The Company has access to emergency lines of credit
    - There is headroom of almost GBP100m under the revolving credit facility and there is also a GBP6m overdraft facility
        - RCF are now more expensive given bank capital charges are now based on the whole facility rather than only the amount drawn down
            - With a positive yield curve, potentially this still reduces borrowing costs for the Company
            - Risk that banks will withdraw uncommitted facilities
- The Company limits the amount of short-term borrowing as a percentage of total net debt
    - While this does not prevent an increase in short-term debt, it does offer a better chance for the debt to be refinanced
- The Company has strong EBITDA generation
- The level of cash and cash equivalents is relatively low, but they are liquid as they are on short-term deposit

- Possible Company actions
    - CAL needs to finance the transformation project
        - The capex requirement is GBP870m, or about GBP120m investment each year for the next 7 or 8 years: by comparison, EBITDA is about GBP200m, and operating profit about GBP120m

	- The interest cover ratio covenant is 1.4 to 1, so with EBITDA at GBP201.7m, that limits interest payments to GBP144.1m - Current finance charges are GBP44.1m so that leaves GBP100m headroom; with average interest cost of 6.26% that equates to GBP1,597m additional debt, comfortably more than the capex need - The leverage ratio covenant: the ratio of net debt to EBITDA, limits net debt to 7.50 times EBITDA - With EBITDA at GBP201.7m that equates to net debt of GBP1,513m, and with current net debt of GBP703m, that allows for an additional GBP810m so this covenant is more of a constraint than the other - Some of the finance need could come from free cash flow so not all needs to be raised through debt: equity finance is also a possibility - Establish committed revolving credit facilities, not just uncommitted lines - Consider refinancing high coupon debt - The average interest rate at 6.26% is high, - The shareholders' loan carries interest of 12% but the loan has a 38-year maturity and it is unlikely CAL could borrow for such a long period from banks or the bond market - Future borrowings to fund the transformation should also have long maturities to match the assets - Consider borrowing in other currencies and swapping back to GBP - This might reduce borrowing costs on future debt - This will introduce new counterparty credit risk.	
		Total: 25 marks

Section B, Question 2 Case Study

Carte Packaging (CP) is an integrated packaging and paper business which manages forests, produces pulp and paper. CP also develops and manufactures industrial and consumer packaging. It operates production sites across more than 20 countries, including the UK, Austria, Poland, Sweden, Russia and Canada.

Selected financial data

EUR million	**2022**	**2021**
Revenue	4,258	3,997
EBITDA	853	809
Profit for the year	429	411
Investment in property, plant and equipment	367	279
Total ordinary dividends paid	164	164
Market capitalisation	6,314	5,674

EUR million	**2022**	**2021**
Non-current assets		
Property, plant and equipment	2,377	2,273
Goodwill and other intangible assets	485	481
Forestry assets	195	190
Financial instruments	16	20
Deferred tax assets	19	16
	3,092	2,980
Current assets		
Inventories	520	510
Trade and other receivables	664	629
Current tax assets	17	19
Financial instruments	8	5
Cash and cash equivalents	23	242
Assets held for sale	1	1
	1,233	**1,406**

Total assets	**4,325**	**4,386**
Current liabilities		
Short-term borrowings	160	391
Trade and other payables	644	660
Current tax liabilities	76	58
Provisions	30	29
Financial instruments	5	14
	915	**1,152**
Non-current liabilities		
Medium and long-term borrowings	659	671
Net retirement benefits liability	139	144
Deferred tax liabilities	153	160
Provisions	25	26
Other non-current liabilities	11	16
	987	**1,017**
Total liabilities	**1,902**	**2,169**
Equity		
Share capital	325	325
Retained earnings and other reserves	1,903	1,710
Non-controlling interests in equity	195	182
	2,423	**2,217**
Total equity and liabilities	**4,325**	**4,386**

Retirement benefits

CP operates UK defined benefit (DB) retirement plans which provide pensions and severance benefits for scheme members.

Assumptions used in calculating the value of retirement plan benefit liabilities are given in the table below:

	2022		2021	
	UK/Europe	Other regions	UK/Europe	Other regions
Discount rate*	2.0%	7.5%	2.0%	8.0%
Rate of inflation*	2.4%	4.5%	2.4%	5.3%
Rate of increase in salaries*	2.9%	5.8%	2.1%	6.5%
Remaining life expectancies on retirement at age 67				
Males	18.5 years	18.5 years	18.4 years	18.6 years
Females	22.9 years	22.5 years	22.5 years	22.5 years

*** Inflation rates as at January 2022**

The 2022 weighted average duration of the defined benefit liability for Europe is 15 years (2021: 15 years) and other regions 12 years (2021: 11 years).

The value of liabilities is given in the table below:

	2022			2021		
EUR million	**UK/Europe**	**Other regions**	**Total**	**UK/Europe**	**Other regions**	**Total**
DB retirement plans liability	**181.8**	**42.6**	**224.4**	**181.8**	**45.0**	**226.8**
Plan assets	85.2	0.0	85.2	82.8	0.0	82.8
Net retirement benefits liability	**96.6**	**42.6**	**139.2**	**159.0**	**45.0**	**144.0**
Of which, DB pension plans	93.0	11.4	104.4	156.6	11.4	108.0
Post-retirement medical plans	3.6	31.2	34.8	2.4	33.6	36.0

The market values of plan assets are detailed below:

	2022			2021		
EUR million	**Quoted**	**Unquoted**	**Total**	**Quoted**	**Unquoted**	**Total**
Equities	24.0	-	24.0	22.2	-	22.2
Bonds	49.8	-	49.8	50.4	-	50.4
Insurance contracts	-	10.2	10.2	-	9.6	9.6
Cash	1.2	-	1.2	0.6	-	0.6
Fair value of plan assets	**75.0**	**10.2**	**85.2**	**73.2**	**9.6**	**82.8**

Q2	(a) Evaluate the key factors that are impacting the current and future funding position of CP's retirement scheme. (b) Evaluate the range of options available to CP to mitigate its retirement scheme risks. Within your answer, you are also required to recommend and justify a course of action for CP.	10 marks 15 marks
		Total: 25 marks

Q2 answer

(a) **Factors affecting retirement plan deficit** — 10 marks

A total of 10 marks are available. 1 mark per well-developed point.

Most (80%) of CP's retirement plan liabilities are in Europe. In 2022, these were unchanged in Europe, but fell by 1% in the rest of the world.

It is not possible to isolate the impact of each factor on 2022 liabilities. However, in general, liabilities will increase if:

- The discount rate falls: this is based on a high-quality bond yield;
- Rates are expected to rise in Europe given the higher inflationary environment which will see bond prices and maybe other asset prices fall. This could have a significant impact as bonds comprise 50% of the plan investments
- Life expectancy of plan participants increases
  - The assumptions for Europe rose in the 2022 while the rest of the world fell / was unchanged
- Inflation increases
  - Increased medical costs will increase the cost of post-retirement health benefits
  - This could increase future salaries.

Asset values depend on the performance of the investment portfolio

- Plan assets (EUR85.2m) only cover 38% of liabilities (EUR224.4m)
- Bonds comprise 58% of plan assets
  - These provide a better cash flow match with pension liabilities but will generate less upside so are unlikely to be sufficient to close the deficit and given rate rises the plan deficit is likely to grow.
- Equities comprise 28% of plan assets

- These have potential for higher price appreciation than bonds, but the amount is probably too small to close the deficit.

(b) **Retirement scheme risk mitigation and recommendations** — 15 marks

A total of 15marks are available. 1 mark per well-developed point to a maximum of 12. 3 marks for a well justified recommendation applicable to CP (noting recommendations should be made up of multiple actions).

Possible actions:

- Close the DB scheme to new members
  - Currently, the scheme is still open to new employees
- Offer existing DB members the opportunity to transfer to a defined contribution scheme
- It seems prudent to take action on the pension deficit while the Company's finances are healthy
  - Increase the Company's cash contribution to the scheme
  - These additional payments can be spread over a period of years if preferred
    - The deficit is EUR139.2m, less than the full year dividend of EUR164m, and profits for the year are EUR367m
- Take on more risk and Invest more in potentially higher yielding assets if these are permitted
  - Invest extra money into equities
    - These should be diversified away from paper and packaging companies to reduce correlation with CP's own performance
  - Include an allocation of higher yielding assets such as private equity, infrastructure, real estate and hedge funds
- However, the pension liability is only 3.5% of market capitalisation
  - CP may not consider it a significant risk and will continue to run the deficit with no intervention.
- Liability buyout – this would involve a fee payable and require significant negotiation given the market for this is limited currently.

Answers should then provide a detailed series of justified recommendations primarily focused on:

- Closing the existing scheme

	• Liaising with scheme trustees • Reviewing and amending the investment portfolio asset allocation • Increasing company contributions Note recommendations are expected to take into account current economic conditions	
		Total: 25 marks

Section B, Question 3 Case Study

Business activities

Midlands United (MU) is a football club with related commercial activities. It competes in the English Premier League. In the past season, ending May 2021, MU finished fifth in the Premiership. MU exited the UEFA Europa League in the knock-out phase and the FA Cup in the fourth round. MU's shares are listed on the London Stock Exchange.

MU has significant international exposures due to shirt sales and other global commercial activities. Their primary overseas markets are the US and Malaysia.

Extracts from MU's financial report

Income statement

GBP '000s	2022	2021
Turnover	169,583	141,416
- of which: Gate and other match day revenues	39,998	39,963
Broadcasting	79,455	56,232
Retail and licensing	10,541	9,850
Commercial	36,816	34,079
Player trading	2,773	1,292
Operating expenses	(148,788)	(136,140)
- Of which: Amortisation of goodwill	166	166
Amortisation of player registrations	30,850	23,703
Depreciation	5,989	5,703
Operating profit	**20,795**	**5,276**
Profit for the financial year	**14,115**	**660**

Balance sheet

GBP '000s	2022	2021
Non-current assets	248,349	230,844
Of which, Tangible assets	172,389	168,424
Intangible assets: player registrations	70,000	56,000
Other non-current assets	2,812	2,402
Current assets	105,388	120,161
Total assets	353,737	351,005
Current liabilities	85,523	95,978
Non-current liabilities	122,866	123,802
Of which, Bonds	71,369	54,576
Loans	5,839	25,679
Total liabilities	208,389	219,780

Equity	145,348	131,225
Total equity and liabilities	353,737	351,005

Foreign currency risk

MU enters into a number of transactions which create exposure in foreign exchange. It monitors this foreign exchange exposure on a continuous basis and will usually hedge any significant net exposure in its currency receivables and payables.

MU is exposed to currency risk from:

- revenue received from participation in UEFA competitions
- commercial revenue
- senior secured notes
- payments and receipts of transfer fees, and probable additional fees payable based on the players concerned achieving a specified number of appearances
- cash and cash equivalents.

There were no foreign currency contracts in place at the balance sheet date as MU's expected foreign currency cashflows were projected to balance over the short to medium term.

Credit risk

MU performs credit checks using an external credit rating agency to evaluate the credit risk of potential customers and counterparties. In relation to significant one-off transactions such as transfer agreements or sponsorship contracts, MU reviews the credit risk based on information available and obtains bank guarantees where necessary. MU also assesses the stability of financial institutions in which cash deposits are held to minimise any potential credit risk.

Q3

(a) Recommend and justify appropriate improvements to MU's disclosures on currency and credit risk. — 7 marks

(b) MU has undertaken some initial analysis and has established the following: — 8 marks

	Annual FX exposure	Annual standard deviation of the spot exchange rate	Spot rate

US	USD 8,030,000	19.84%	GBP/USD 1.2000
Malaysia	RM 29,017,500	29.21%	GBP/RM 5.2400

The correlation coefficient between USD and RM 0.7400

MU applies a confidence level of 95% to all FX VaR analysis.

Based on this information calculate the annual VaR risk for MU's currency exposures and the reduction in company-wide VaR when analysing FX exposures at a portfolio level.

(c) Evaluate the benefits and drawbacks for MU of using Value-at-Risk to evaluate its FX risk. . Within your answer you are also required to recommend and justify other techniques MU could use as an alternative.

10 marks

Total: 25 marks

Q3 answer

(a) **Foreign exchange and credit risk disclosure**

7 marks

A total of 7 marks are available: 1 mark for each reasonable and relevant point, up to a maximum of 7.

Currency risk

- The disclosure is insufficient: it only gives information on how the risk arises, but nothing else
    - There is no information on the currencies involved
- Only qualitative information is provided
    - Add quantitative data on the amount of exposure
    - There is no sensitivity or VaR data for the exposure
- There is no mention of how the risk is managed
    - The balance sheet discloses derivatives exposure which may be due to FX hedging
        - These could include cross-currency swaps for the bond issue, FX options for the conditional payments, and FX forwards.

Credit risk

- The disclosure is insufficient: it gives information on the credit management process but nothing else
    - There is no information on how the credit risk arises nor the amounts, though there is information on trade

debtors, prepayments and cash and cash equivalents on the balance sheet

- Presumably there is credit risk from media contracts and commercial and sponsorship revenue
- There is also risk from other football clubs for payment of transfer fees in instalments or conditional on performance of the players

- There is no information on past due or impaired amounts.
- International accounting standards (IFRS7), Companies Act 2006, and related requirements are also relevant

(b) **VaR Calculation**

8 marks

	GBP / USD	**GBP / MYR**	
Annual STDEV	19.84%	29.21%	
95% Z-Score	1.65	1.65	
Exposure (income)	8,030,000.00	29,017,500.00	
Annual Var %	32.7412%	48.1950%	1 mark
Spot rate	1.2000	5.2400	
Spot value (USD)	6,691,666.67	5,537,690.84	1 mark
Var Rate	1.5929	7.7654	2 marks
99% Worst USD	5,041,119.97	3,736,768.23	1 mark
Var	1,650,546.70	1,800,922.61	
Total VaR		**3,451,469.31**	1 mark
$\mathrm{VaR_{AB}} = \sqrt{\mathrm{VaR_A}^2 + \mathrm{VaR_B}^2 + (2 \times \rho_{AB} \times \mathrm{VaR_A} \times \mathrm{VaR_B})}$			
Correlation	**0.7400**		
Var a 2	2,724,304,408,880.89		
Var b 2	3,243,322,247,209.21		
2 x P x Var x var	4,399,310,168,918.51		
Sum	10,366,936,825,008.60		
Portfolio Var	**3,219,772.79**		1 mark
Div benefit	**231,696.52**		1 mark

(c) **VaR evaluation**

10 marks

1 mark per well developed point to a maximum of 10 marks

- Advantages
  - VaR allows MU to assess how likely the balance sheet might be hit by a specific loss: for example, the probability of losses reaching a specific level with a given probability
    - Gives a measure of the investment risk

	- Can consider risk from different risk exposures so it could also include interest rate risk etc
	- Better answers could discuss the different types of VaR and portfolio VaR
	- Can include a range of scenarios to consider which would give rise to outcomes outside the MU's tolerance
	  - Quantifies the impact of each scenario
	- Can help identify what needs to be done to bring VaR within tolerance limits
	  - Change the exposures
	  - Apply hedging
	- Based on real market data
	  - Uses probabilities of the size of the move and the correlation between assets
	
	- Drawbacks
	  - Only looks at the downside risk
	  - Computationally intensive as there are many different possible combinations
	  - More difficult to calculate than sensitivity analysis
	  - Based on historic volatilities and correlations which may change. Relies on a number of assumptions such as confidence level and period over which FX exposures can be liquidated
	
	Answers should then discuss / compare and contrast to VaR alternative techniques that MU could use to evaluate its FX risk. These include:
	
	- Sensitivity analysis
	- Scenario analysis
	- More advanced VaR (ie Monte Carlo and Extreme VaR)
	- CFAR	

		Total: 25 marks

Published in September 2022 by
ACT (Administration) Limited
69 Leadenhall Street
London
EC3A 2BG

www.treasurers.org