



**LEADING TREASURY  
PROFESSIONALS**

**The Association of Corporate Treasurers**

# **Examiners Paper, Solutions and Examiners Report**

## **MCT ADVANCED DIPLOMA GENERAL EXAMINATION**

**April 2014**

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## QUESTION 1

Below are the risk metrics for the shares of three companies from contrasting sectors.

	Variability	Geared Beta	Specific Risk
A. International hotel chain	33%	1.48	21%
B. Business software and services	44%	0.79	42%
C. Building trade supplier and services	48%	1.75	38%

### Required:

- a) What are the implications for the whole process of corporate risk management for companies with, respectively, either a high beta or high specific risk? You should emphasise any required differences in approach between the two groups and illustrate your answers with examples of typical risks from the companies above.

(8 marks)

You have data on two specialist portfolios A and B. Portfolio A consists of companies with the highest dividend yields and lowest P/E ratios. Portfolio B consists of companies with the highest P/E ratios and the lowest dividend yields. Assume that investors require a return over time of 6.25% on an average equity risk portfolio, based on a risk-free rate of 2.75% and a market risk premium of 3.5%.

Portfolio	A	B	Market average
Yield	4.7%	1.2%	2.8%
P/E	12.8	35.4	20.9
Beta	0.72	1.02	1.00

### Required:

- b) Calculate what rate of dividend growth is required in each of the two groups, given the differing risk-adjusted rates of return required.
- c) What are the implications for the financial strategy of companies in each of the two groups? Assume that the companies are committed to meeting shareholders' expectations of achieving a sustainable, acceptable level of return and an appropriate mix of yield and growth.

(7 marks)

(Total 17 marks)

## QUESTION 2

Global Brands is a major food manufacturer that is still suffering from a disastrous acquisition spree, funded by £2.2 billion of syndicated bank debt. This was followed by rising wheat prices and the global economic down-turn. The company's market capitalisation fell from over £2 billion to a low point of £72 million in 2011 when one broker actually valued it at minus £13 million. At that point £100 million of the company's debt was acquired by a vulture fund at 50p in the pound. Between July and October 2013 the shares rose from 80p to 185p on rumours of a "final" financial re-structuring. Current share price is 128p giving a market capitalisation of £307.2 million. The declared objective of the CEO is to return it to being "a normal company" in 2014 after six years of disposals, re-structuring, down-sizing and re-financing.

In late December 2013 the company announced that it was considering a rights issue to raise around £300 million, to be followed by a re-structuring of its expensive debt portfolio which involves 29 banks.

In addition, the company has a pension deficit of £395 million (which could either increase or decrease in the future) and is approaching the end of an agreed 2-year moratorium on payments to repair the deficit, as agreed with the scheme's trustees. Resumed cash top-ups could cost £73 million in both 2014 and 2015. Also in 2014 the company must pay £55 million in rolled-up interest and fees from previous re-financing arrangements.

Full-year operating profit is forecast at £146 million, after £30 million of further cost savings, on sales virtually unchanged from 2012. Brokers are forecasting underlying earnings per share of 50p for 2013, based on the existing number of shares.

Net debt had been reduced to £890 million at the half year. Free cash flow before interest for the full year is expected to be around £70 million.

A financial summary for the last few years is given in Table 1 overleaf and is also reproduced in a detachable format at the end of the exam paper.

Assume that the date is late December 2013.

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## Question 2 Table 1

### Global Brands plc - Summary Financials

#### Income Statement

	December	2008 £ mill	2009 £ mill	2010 £ mill	2011 £ mill	2012 £ mill	Interim 6m 2013 £ mill
<b>Sales Revenue</b>		<b>2,604</b>	<b>2,661</b>	<b>2,234</b>	<b>2,000</b>	<b>1,756</b>	<b>621</b>
<b>Operating Profit</b>		<b>114</b>	<b>222</b>	<b>220</b>	<b>117</b>	<b>69</b>	<b>47</b>
Exceptionals etc. +/-		(181)	(60)	(103)	(293)	28	
<b>EBIT</b>		<b>(67)</b>	<b>162</b>	<b>117</b>	<b>(176)</b>	<b>96</b>	<b>47</b>
Other Financial Income & Expenditure		(263)	39	(43)	37	(10)	
Interest Received		42	11	12	7	4	2
(Gross Interest Paid)		(186)	(180)	(160)	(127)	(86)	(27)
<b>Profit before Tax</b>		<b>(475)</b>	<b>32</b>	<b>(75)</b>	<b>(259)</b>	<b>4</b>	<b>22</b>
<b>Profit after Tax</b>		<b>(444)</b>	<b>25</b>	<b>(99)</b>	<b>(230)</b>	<b>26</b>	<b>33</b>
Discontinued Operations					(109)	(13)	
<b>Profit / (Loss) for the Year</b>		<b>(444)</b>	<b>25</b>	<b>(99)</b>	<b>(339)</b>	<b>13</b>	<b>33</b>

#### Balance Sheet

	Interim 6m
Intangible Fixed Assets	2,694
Tangible Fixed Assets	639
<b>Total Fixed Assets</b>	<b>3,333</b>
Inventories & receivables	721
Cash etc	41
<b>Total Current Assets</b>	<b>762</b>
<b>Total Assets</b>	<b>4,095</b>
Short-term Debt	448
Current Payables & Provisions	624
<b>Total Current Liabilities</b>	<b>1,072</b>
Medium & Long-term Debt	1,633
Pension & Other Provisions	399
<b>Total Non-current Liabilities</b>	<b>2,032</b>
<b>Total Capital and Reserves</b>	<b>992</b>

#### Cash Flow Summary

	Interim 6m	Total 2008-13
<b>CASH FLOW FROM OPERATIONS</b>		
Operating Profit	83	329
(Depreciation of Tangible Assets)	57	258
(Amortisation & Impairment of Intangibles)	421	908
Other Non-cash & Exceptional Items	(333)	(523)
(Increase) / Decrease in Net Working Assets	(58)	(160)
<b>Cash Flow From Operations</b>	<b>170</b>	<b>812</b>
Net Capital Expenditure	(103)	(312)
(Tax Paid)		(4)
(Dividends Paid)	(56)	(56)
<b>Cash Flow Before Interest</b>	<b>11</b>	<b>440</b>
<b>(Net Interest Paid)</b>	<b>(105)</b>	<b>(602)</b>
<b>Internal Cash Flow</b>	<b>(95)</b>	<b>(162)</b>
(Acquisitions), Disposals, (Investments)	(31)	754
Increase / (Decrease) in Share Capital		380
Increase / (Decrease) in Net Debt	125	(592)

**Required:**

- a) Calculate an appropriate simple rights issue ratio of new shares to existing shares (e.g. 2 for 1, 5 for 2) to raise circa £300 million at a discount of circa 30% to the latest share price. Calculate the theoretical ex-rights share price.  
(5 marks)
- b) Calculate leverage ratios (debt to total capital) based on both book and market values of the equity, both before and after the rights issue, using your projections of the December 2013 position.  
(4 marks)
- c) The CEO's objective for 2014 is to return Global Brands to being "a normal company". How would you define "a normal company" in terms of values for the following four key credit metrics, given the sector?
- i) Net debt % total capital (as in question 2b above)
  - ii) Net debt / EBITDA
  - iii) Interest cover based on EBIT, EBITA or EBITDA
  - iv) Free cash flow % total debt
- (2 marks)
- d) Based on your answer to question 2c, does the rights issue return the gearing to your definition of "normal"?
- Calculate the impact of the rights issue on the other three credit metrics and test whether they also meet your specified "normal" target figures, based on the prospective 2013 figures. You will need to use the information given about the likely profit and cash flow performance for 2013.  
(8 marks)
- e) Once the rights issue has been completed, what would you recommend in terms of re-structuring the company's remaining debt and dealing with the pension deficit?  
(5 marks)

(Total 24 marks)

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### QUESTION 3

The following are all widely used DCF valuation methods:

(Note that all times frames are indicative rather than definitive.)

- i) NPV of a growing perpetuity based on next year's sustainable free cash flow to the firm.
- ii) NPV of 10 years' forecast free cash flows to the firm plus a growing perpetuity at year 10.
- iii) NPV of 30 years' forecast free cash flows to the firm with no terminal value.
- iv) NPV simply of a year-5 terminal value, based on a multiples calculation of EV, less outstanding debt, plus accumulated cash.
- v) NPV of forecast dividends for 10 years plus a growing perpetuity at year 10.
- vi) NPV of a growing perpetuity based on next year's prospective dividend.

**Required:**

**For each of these:**

- i) **Give an example of a valuation situation for which it is the most appropriate valuation method, explaining why.**
- ii) **State whether the enterprise or the equity is being valued.**
- iii) **State what is the appropriate form of discount rate to use and why.**

**(9 marks)**

#### **QUESTION 4**

You are Treasurer at CamCo, hitherto a mid-sized, unlisted, privately-owned engineering company which has struggled to survive the financial crisis. CamCo has been acquired recently by private equity company PECO and is under new management. You have survived the transition and report direct to the newly appointed Finance Director. CamCo's net asset value is currently circa. £50m.

PECO has decided to sell CamCo's only overseas subsidiary CamEx situated in X-land and to apply the proceeds to reduce CamCo's debt (all bank borrowings).

CamEx was set up in 2007 by CamCo with £20m borrowed from CamCo's relationship bank, ABC Bank, and a further £10m equivalent borrowed in X-land from a local subsidiary of ABC Bank. The £20m, representing CamCo's equity investment in CamEx, was hedged on the advice of ABC Bank by a 10-year cross currency interest rate swap, with 3 years now left to run.

There are three parties interested in acquiring CamEx, all large non-UK quoted companies, with which negotiations are about to commence.

CamEx net asset value is currently circa £15m equivalent, excluding the impact of the equity hedge. The reduction since 2007 is due to a mix of losses and local currency depreciation.

Based on preliminary discussions with the interested parties, PECO expects to realise £25-30m equivalent from the sale. However, all three potential purchasers have indicated their preference for an element of deferred payment linked to future performance and representing 25% to 35% of the purchase price.

The existing currency risk policy covers only transaction risks arising in the course of trade. Your Finance Director is concerned that the existing currency risk policy may not cover adequately the currency risks arising from the disposal so he may need to seek authority to act outside current guidelines.

**Required:**

**Prepare a note for the Finance Director:**

- i) Setting out only the currency risks related to the disposal.**
- ii) Explaining how you would propose to manage these risks. Assume that X-land's currency is fully tradeable.**

**(12 marks)**

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## QUESTION 5

It has been common practice to attribute an implied credit margin to new fixed rate bond issues. For instance, if an AA rated company issues a 10 year fixed rate bond at 4.00% and the 10 year swap rate is 2.60%, then the implied credit margin is 140 basis points.

**Required:**

- a) **For the AA rated bond issuer above to transact a LIBOR-linked loan with a bank at a margin of 140 bp over LIBOR, what assumptions would need to hold for the properties of the loan and for the lender relative to the properties of the bond and of the bond investor?**

**(4 marks)**

- b) **Would the credit rating of the bond issuer, eg BBB or BB versus AA, make any difference to your answer? Justify your response.**

**(1 mark)**

- c) **For the same company raising funds, how is the full implementation of Basel 3 likely to affect the relationship between the price of LIBOR-linked bank debt swapped to fixed rate and the price of fixed rate bonds?**

**(4 marks)**

**(Total 9 marks)**

## QUESTION 6

Elk Ltd designs and markets men's and women's leisurewear which is sold to specialist retail outlets in the UK. Production is outsourced to UK suppliers. Elk Ltd focusses on design and marketing and the outsource suppliers despatch direct to the customer retail outlets. Elk was set up 12 years ago and has built up a strong identity for excellent quality and eye-catching design. Turnover is currently £30m, exclusively in the UK; profit after tax is £3m, bank debt is £3m.

The owner and CEO, an experienced leisure wear industry entrepreneur, has decided to set up an e-retail operation, go international and grow revenue three fold within 5 years. Fundamental to the strategy is to expand the product range and to resource as well as sell internationally.

You have applied for the role of Finance Director, a new appointment, and are currently employed as deputy treasurer in a mid-size international corporate. You are going for a second interview and expect to be questioned about how you visualise the Finance Director role at Elk developing were you to be appointed. The Finance Director role includes treasury responsibilities.

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At your first interview you learnt that the target markets are initially Europe (EU and more developed Eastern European countries), then North America. The CEO has already been talking with possible suppliers in several EU, Asian and Central American countries. Finances are currently managed by a chartered accountant who was recruited from the firm's auditors five years ago as growth began to take off and who will report to the new Finance Director.

You were provided with the summary P/L and B/S below. The term loan is secured on the office property and the overdraft is secured by a fixed and floating charge. During your discussions with the CEO you learnt that your international treasury experience was a key attraction.

<u>Profit and Loss £'000</u>		<u>Balance Sheet £'000</u>			
<u>Revenue</u>	<u>30,000</u>	<u>Assets</u>		<u>Liabilities</u>	
• PBIT	3,975	• Fixed Assets	1,000	• Equity	4,000
• Interest	225	• Debtors	7,500	• Term Debt	500
• PBT	3,750	• Cash	1,000	• Overdraft	2,500
• Tax	750			• Creditors	2,500
• PAT	3,000		<u>9,500</u>		<u>9,500</u>

**Required:**

- Briefly review and evaluate the financials. (3 marks)
- If the business develops as planned, discuss how and why the shape of the P/L and B/S is likely to change. (5 marks)
- Explain how you would structure the Finance Director/Treasurer role to best support the future needs of the business. (5 marks)
- Comment critically on the future viability of the business. (2 marks)

(Total 15 marks)

## QUESTION 7

### Company Background

Chemco is one of several competing companies producing a highly dangerous commodity chemical which cannot be stored, which is sold to corporate users and which is also occasionally traded with competing companies to manage surplus or deficit positions.

It is normal practice in the market for the corporate commodity users to contract for a fixed take-off quantity at a fixed/forward price over fixed periods of 3, 6 or 12 months ahead.

It is also normal practice for the commodity producers to trade with each other, either at spot to iron out intra-day surpluses and shortages, or under a forward contract to cover longer term imbalances.

Chemco has developed a technology which differs from that of its competitors. While it is more efficient in operation, it is also prone to lengthy breakdowns, sometimes running into months.

In the course of developing the technology, Chemco has overspent and is now sub-investment grade. In contrast all its corporate customers and competitors are investment grade. Chemco's sub-investment grade status makes it more risky as a counterparty in a supply or purchase contract. Consequently, Chemco's contractual counterparties seek collateral as a hedge against Chemco's failure to deliver which could necessitate replacing the contract for the remaining term at a disadvantageous price.

### **Issues**

#### Scenario 1

- Chemco agrees a contract to sell to a customer for delivery over a period of time at a fixed (forward) price
- if Chemco could not deliver, eg because of plant breakdown, the user would need to replace Chemco with another supplier for the remaining term of the contract
- so, if the replacement price is above contracted fixed price, the user suffers a "replacement" cost
- as Chemco is sub-investment grade, the user demands collateral in the form of an initial margin and, on a daily basis, a variation margin, the latter depending on replacement cost and volume remaining to be delivered
- in contrast, Chemco does not receive collateral if the replacement price falls below the contracted fixed price.

### **Required:**

- a) **Assuming there is no actual interruption to supply, eg no plant breakdown, what is the impact on Chemco's liquidity of this scenario in a rising price environment?**

**(3 marks)**

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## Scenario 2

- one plant breaks down, and it may stay down for a substantial period
- in this case, assume that Chemco decides to enter into a forward purchase contract with a competitor to make good the shortfall to Chemco's own customers.

### **Required:**

- b) If sellers to Chemco take the same view of counterparty risk as buyers, what would you expect to be the impact on Chemco's liquidity of this scenario in a falling price environment?**

**(3 marks)**

Commodity price and volatility over the past four years have been:

Average price	£239 per unit
Monthly standard deviation	£53
Range	£410 - £110

Summary financials for the most recent year are:

		£m
P & L:	Revenue	2,410
	Profit after tax	<u>330</u>
B/S:	Fixed assets	<u>2,400</u>
	Current assets	1,100
	<i>of which cash</i>	640
	Current liabilities	<u>(400)</u>
	Net current assets	<u>700</u>
	Total assets	3,100
	Long term liabilities	<u>(1,600)</u>
	Net assets	<u>1,500</u>
		<u>                    </u>
Cashflow:	Net increase in cash	<u>70</u>

Chemco has 6 independent operating plants. Contracts with customers run from the first day of each month for 3, 6 or 12 months. Customers have some preference for 12 month contracts running in line with their accounting year.

### **Required:**

- c) For Scenario 1, quantify the scale of the impact. How significant is this for Chemco's liquidity?**

**(5 marks)**

- d) What might be done to relieve the impact of commodity price volatility on liquidity?**

**(3 marks)**

**(Total 14 marks)**

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## ADVANCED DIPLOMA

### GENERAL EXAMINATION - NOTE FORM ANSWERS

APRIL 2014 – (Final Draft)

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#### QUESTION 1

[30.6 mins, 17 marks]

1.a.

(14.4 mins, 8 marks)

**[Marking scheme: ½ mark for each good point]**

- i) High beta ie high systemic risk (hotels and building supplies) – premium on monitoring the macro-economics and understanding the causal links to own business. Also having strategic and operational responses to economic downturns and vice-versa. Also need to understand lead and lag times re impact of economics on business. Levered beta also increased by gearing, therefore interest rate sensitivity etc.

Hotels – cyclical dependence on leisure and business spending. High fixed costs.

Building supplies – dependent on very cyclical house building and home improvements spending. Less cyclical general construction and routine maintenance spending.

- ii) High specific risk – (software and building supplies) need to understand relevant specific risk factors, their relative impact on the business and how to forecast/early detect – then how to respond. Much depends on their nature eg technological developments, regulation, weather, unique sector structural issues. More scope than in 1.a. (i) for pre-emptive action – eg R&D resource, information/analysis/forecasting tools.

Software – fast changing technology, markets and competition. Highly dependent on skilled personnel, patents etc.

Building supplies – dependent on weather, technical developments, creditworthiness of contractors and sub-contractors.

Management of gearing is affected by higher risk whatever the reason.

1.b.

(3.6 mins, 2 marks)

**[Marking scheme: ½ mark for each of the four numbers correct]**

Using the CAPM formula for return on equity, here  $r_a$

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$$\bar{r}_a = r_f + \beta_a(\bar{r}_m - r_f)$$

Where:

$r_f$  = Risk free rate

$\beta_a$  = Beta of the security

$\bar{r}_m$  = Expected market return

### Portfolio A

Required return =  $2.75 + (0.72 \times 3.5) = 5.27\%$  for relatively low (non-diversifiable) risk sectors. Dividend yield of 4.7% means required capital growth is only 0.57% p.a. ( $5.27 - 4.7 = 0.57$ ).

### Portfolio B

Required return =  $2.75 + (1.02 \times 3.5) = 6.32\%$  because of relatively high non-diversifiable risk sectors. Dividend yield is only 1.2% so required annual growth is 5.12%. ( $6.32 - 1.2 = 5.12$ ).

1.c.

(12.6 mins, 7 marks)

[Marking scheme: ½ mark for each good point]

### Portfolio A (High yield, low P/E)

Maintenance of stable profits, ideally with growth to match inflation as a minimum. Careful management of cashflows to support the dividend payment. Be alert for any shocks or fundamental changes in the sector economics and risk profile. Low growth, probably in mature, stable markets means cash drains to working capital and capex should be low, stable and manageable.

### Portfolio B (Low yield, high P/E)

Sustaining the expected high level of growth in activity and profits via capital investment or acquisitions. Identifying new investment or acquisition opportunities then effective appraisal and delivery of those opportunities. Ensuring that company maintains or expands market share – growth markets also have changing characteristics and hence higher levels of risk, so understanding/monitoring markets and customers is even more crucial. Cash flows will be more volatile because of all the above but dividends are lower so borrowing to maintain dividends may be required, temporarily or more permanently, but this is not a problem, provided appropriate gearing level is not exceeded.

### Question 2

[43.2 mins, 24 marks]

2.a.

(9.0 mins, 5 marks)

[Marking scheme: ½ mark for each correct part of the calculation]

Latest share price 128p    Market cap. £307.2m    Therefore number of shares 240m ( $307.2m/1.28$ )

30% discount gives 89.6p ( $128 \times 0.7$ )

No. of shares to raise £300m =  $300/0.896 = 336m$  shares

Ratio of new to existing =  $336/240 = 1.4/1.0$

(So, 7 for 5 gives 336 new shares @ 90p = £302.4m (30% discount) )

(OR 3 for 2 gives 360 new shares @ 84p = £302.4m (34% discount))

\* subsequent calculations are based on 7 for 5 @ 90p, £302.4m

Ex-rights price      =  $(307.2m + £302.4m) / (240m + 336m)$   
                             =  $£609.6m / 576m = 105.8p$

OR  $(128p \times 240 / 576) + (90p \times 336/576)$   
                             =  $53.33 + 52.5 = 105.8p$

**2.b.**

**(7.2 mins, 4 marks)**

**[Marking scheme: I have 16 detailed steps in the calculations so 1/3 mark for each point]**

2012 net debt =  $255 + 774 - 53 = 976$

[Note Interim net debt =  $253 + 690 - 53 = 890$ ]

Cash flow before interest is forecast at £70m, less interest of, say £50m, (interim  $25 \times 2$  pessimistically) plus disposal proceeds of £113m, gives £133m full year reduction of debt.

Net debt at 2013 =  $976 - 133 = 843$

Shareholders' funds 2012 = 404 plus forecast 2013 earnings of £120m = £524m.

(Note Forecast earnings –  $50p \times 240 = £120m$ )

Market capitalisation = 307.2m

Before

Net debt / (Debt plus market cap) =  $843 / (843 + 307.2) = 73\%$

Net debt / (Debt plus book equity) =  $843 / (843 + 524) = 62\%$

After rights issue

Debt =  $843 - 302.4 = 540.6$

Equity market cap. =  $307.2 + 302.4 = 609.6$ . Total market capital = 1150.2

Book equity =  $524 + 302.4 = 826.4$ . Total book capital = 1367.0

Market leverage =  $540.6 / 1150.2 = 47\%$

Book leverage =  $540.6 / 1367.0 = 40\%$

**2.c.**

**(3.6 mins, 2 marks)**

**[Marking scheme: 1/3 mark for each good point]**

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Assume a “normal company” is at least investment grade BBB and that food is inherently a low-risk sector.

- i) Net debt of total (book) capital = max 50%
- ii) Net debt / EBITDA = max 3.5
- iii) EBIT interest cover = min 3.5 (EBITDA = min 5.5)
- iv) Free cash flow % total debt = min 5.7%

**2.d.**

**(14.4 mins, 8 marks)**

**[Marking scheme: ½ mark for each bit of correct calculation or good point]**

Gearing; book leverage goes to 40%, therefore yes (less than 50%).

#### Workings

EBITDA = 146 + 32 + 48 = 226 (forecast operating profit, double the half-year D&A)

Half year net interest = £25m on net debt of 890, down from 976 ie 5.4% on average debt:  $(225) \div ((890 + 976) \div 2) = 5.4\%$ . Average 2013 debt of  $(976m + 843) / 2 = 910$ . Full year interest which is close to double the interim figure for 2013, at 5.4% = £49m. Less interest saved on £300m debt reduction (16.2) gives 2014 interest pro-forma interest of c. £32.8m.

- Net debt/EBITDA –  $540.6 / 226 = 2.4$  – very good  
(EBIT/interest cover =  $146/49 = 2.98$ . Next year  $146/32.8 = 4.45$  very good  
(EBITDA/interest =  $226/32.8 = 6.89$  very good
- Free cash flow % total debt =  $70/540.6 = 12.9\%$  – very good. However, note that pension contributions will start again next year. £73 million could wipe out cash flow, compounded by the old rolled up fees.

#### Conclusions

Debt at acceptable level immediately after rights issue, even allowing for £128m of debt-funded exceptional costs next year.

With reduced interest in 2014 interest cover will be very good, but only before the pension and interest costs of £128m, which would wipe out EBIT.

Free cash flow to debt in 2013 is excellent, especially as the £70m is assumed to be after a full allowance for working capital and capex, plus continuing exceptional and other non-cash adjustments. But the £55m payment for rolled-up fees and interest in 2014 reduce the free cash flow ratio to  $15/542.6 = 2.8\%$ . Still a big problem.

This is perhaps approaching investment grade territory but there is not enough stability in sales or financings to justify any early promotion to an actual investment grade rating. It is still shrinking (double the interim turnover of 621 represents enormous contraction) and is still small for a food group.

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2.e.

(9.0 mins, 5 marks)

**[Marking scheme: A number of possibilities but ½ mark for each good point]**

The syndicated bank debt from 29 banks can be re-financed perhaps via a bond issue, given an (unlikely) return to investment grade rating. Pricing might be around 4% as against the current effective interest rate of about 5 to 6%, thus saving £5.4m to £10.8m on the reduced debt level. Even a high yield bond issue, where the market is flourishing, might allow a coupon of around 5%-5.5%

Alternatively the existing debt could be re-structured via a reduced syndicate, at a more favourable interest rate, and the £55m of rolled-up interest and fees re-scheduled to help 2014 profits and cash flow. But need to get rid of “vulture” fund debt.

The two pension top-ups will cost £146m and reduce the current pension deficit by 37%. Assuming the residual £249m deficit remains unchanged and can be made good over the next five years at £50m per year.

	2013	2014	2015	2016
Operating profit	146			
Less reduced interest	(33)	5% growth per year		
Profit after interest	113	119	125	131
Exceptionals (rolled up fees & pensions)	0	(128)	(73)	(50)
Towards normality by 2016? <sup>11</sup>	113	(19)	52	81

**Question 3**

**[16.2 mins: 9 marks]**

**[Marking scheme: 1½ marks for each scenario, being 1 for the first part and ¼ mark for each of the other two parts]**

**NB Emphasis is on why the candidate’s example fits the scenario.**

- i) Fundamental valuation of a stable business (stable cash flows, stable growth rate). WACC based on target gearing. Enterprise valuation.
  - ii) Business with fluctuating or sharply growing cash flows until year ten then stability. Accessible cash flows. WACC based on target gearing Enterprise
  - iii) Project or concession business with a finite life. WACC appropriate to level of risk and gearing Enterprise
  - iv) Private equity investment where most of cash goes to debt providers (leveraged structure) and no dividends paid. Return is all via increased value. Discount at high risk, leveraged equity rate. Equity valuation
  - v) “Shareholder-type” evaluation of an equity investment in a new/developing business with maybe no or sharply growing dividends at first, but reaching dividend stability after year 10. Equity discount rate appropriate to level of risk. No access to corporate cash flows. Equity
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- vi) Equity shareholding where dividend policy well established and stable.  
No access to cash flows or influence over dividend policy. Equity discount rate appropriate to level of risk Equity

#### Question 4

[21.6 mins, 12 marks]

**[Marking scheme: to pass, identification of main risks, ie settlement “at purchase”, deferred payment, the swap and possibly the CamEx local loan; and a narrative which recognises the existence of these four and addresses their management]**

#### Background Features

- The disposal has three phases:
  - (i) Negotiation to agreement
  - (ii) Agreement to completion
  - (iii) Deferred payment post completion
- Risks are contingent, ie phases (i) and (ii) may not complete and phase (iii) depends on future performance
- Risks are dynamic, ie as the process develops the probability of completion and of other dimensions such as timing and amounts of deferred payments will change.

#### (i) Currency Risks

Assume that the purchaser is buying the company CamEx rather than the assets, will pay in currency X and settle the deferred element over 3 years.

Therefore the CamEx borrowing of £10m equivalent passes over to the purchaser (subject of course to any “change of ownership” covenants and parent company guarantees that might have been given to the local lending bank).

The range of outcomes suggested are:

Sale Price £m Equiv.	25.00		27.50		30.00	
	At Purchase	Defer	At Purchase	Defer	At Purchase	Defer
Deferred 25%	18.75	6.25	20.62	6.88	22.50	7.50
30%	17.50	7.50	19.25	8.25	21.00	9.00
35%	16.25	8.75	17.87	9.63	19.50	10.50

Taking the midpoint of the table, the sums exposed to fx risk are:

- the sum paid over at purchase, eg £19.25m equivalent in X currency, during the period to completion.

- the deferred payment post completion, circa £8.25 equivalent over 3 years, depending on performance.
- the mark to market on the 10 year cross currency interest rate swap with three years still to run; if held to maturity the swap bank will pay CamCo £20m in return for the X currency spot equivalent of £20m at the commencement of the swap seven years ago and in the meantime CamCo will continue to pay X-currency and receive sterling related to the interest cost of the £20m borrowed from ABC Bank in 2007.

## (ii) Managing the Risks

These various risks are significantly more complex than Camco's traditional transaction risk. How material are they?

Over the next three years to the maturity of the ABC Bank £20m loan, assume that CamCo will pay 5% interest.

Assume also that the swap payments and receipts are roughly equivalent to 5% [£ = a sterling sum, £X = sterling equivalent of a sum in X currency].

The numbers for the Purchase & Deferred Payments are the mid-table ones above.

' 000	t = 0	t = 1	t = 2	t = 3
<u>ABC £20m Loan</u>				
CamCo pay 5% int		£1,000	£1,000	£1,000
CamCo repays loan				£20,000
<u>Swap</u>				
CamCo Rec, say		£1,000	£1,000	£1,000
				£20,000
CamCo pays, say		£ X 1,000	£ X 1,000	£ X 1,000
				£ X 20,000
<u>Purchase &amp; Deferred</u>				
At Purchase	£ X 19,250			
Deferred		£ X 2,750	£ X 2,750	£ X 2,750

PECo is selling CamEx to generate cash and pay down debt.

It might be reasonable to assume that PECO will prefer to keep things simple rather than encourage CamCo treasury to take a view and run positions on sterling against X.

So one possibility if the purchase occurs is to break the swap now, pay the cost if necessary since that reflects current market sentiment and use the £ X 19,250,000 purchase proceeds to repay ABC Bank.

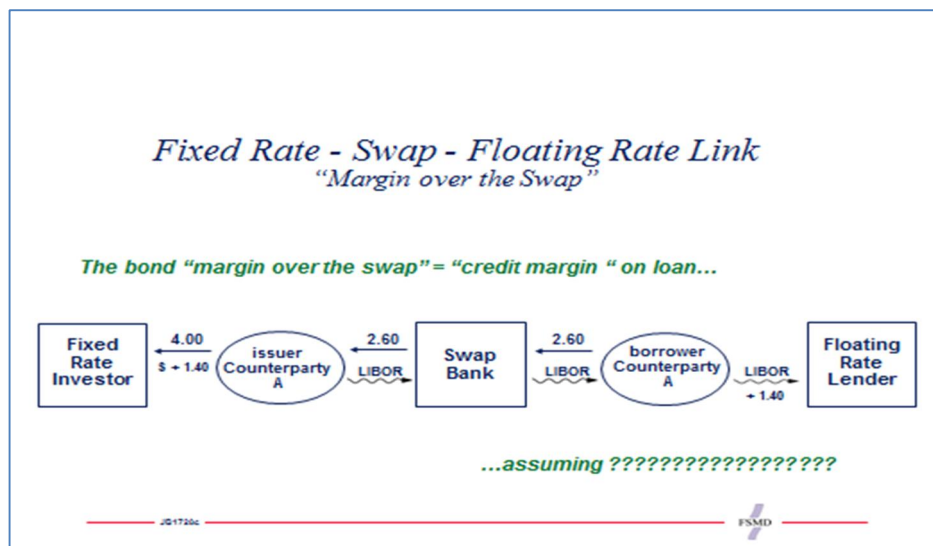
This just leaves the, as yet, uncertain deferred payments which could be dealt with as an annual one-off hedge decision as the X-currency proceeds for the coming year become more predictable.

In line with keeping it simple, the period up to agreement of the purchase price and completion of all diligence could be left unhedged.

## Question 5

[16.2 mins, 9 marks]

[Marking scheme: Minimum 4 credible comments for each of 5.a and 5.c. and 1 credible comment for 5.b.]



### 5.a. Assumptions

(7.2 mins, 4 marks)

The terms (eg maturity, repayment (drawdown) profile, security, covenants) for the loan facility are the same as for the issued bond, as well as the timing.

The lender's risk-return preferences are the same as the bond investor's. The corollary to this comment is: where are the preferences likely to differ significantly? – asset liquidity is an obvious one. Ancillary business is another.

If it is some time post the bond issue, that the bond is traded.

### 5.b. Credit Rating Level

(1.8 mins, 1 mark)

If the bond issuer's rating is near the investment grade boundary, then the bank may be able to charge a premium price because the issuer/borrower is more dependent on the bank relationship for liquidity. Thus, higher rated borrowers are more easily able to tap bond markets and have less dependency on banks.

### 5.c. Impact Basel 3/CRD 4

(7.2 mins, 4 marks)

Basel 3/CRD 4 regulations (and ring-fencing in the UK) when fully implemented will require banks to hold substantially more capital and term liquidity than in the past so that bank risk return preferences will alter, as they did in the late 1980s/early 1990s when Basel 1 was introduced.

So banks will again be disintermediated as they have been already in the social housing 30-yr debt market which was previously mainly bank funded and where new debt is now mostly capital market funded.

These changes open the door wider for non-bank lenders which are not subject to capital and liquidity regulation, eg for private placement investors.

### Question 6

[27.0 mins, 15 marks]

**[Marking scheme: expect to see some quantification and a justified credible conclusion]**

#### 6.a. Financial evaluation

(5.4 mins, 3 marks)

PBIT/Sales %	3,975/30,000	=	13.3%
ROCE	3,975/6,000	=	66.3%
Net Working Assets/Sales	5,000/30,000	=	16.7%
Fixed Assets/Sales	1,000/30,000	=	3.3%
Interest Cover	3,975/225	=	17.7 times
“Years to Repay”	2,000/3,975	=	0.5 years
Gearing (Book)	2,000/4,000	=	50.0%
Gearing (P/E=4)	2,000/12,000	=	16.7%
Tax Rate	750/3,750	=	20.0%
Interest Cost	225/3,000	=	7.5%

Based on the numbers:

- Profitable, very high return on capital employed
- Moderate working capital, low fixed asset intensity
- Lots of debt capacity, high interest cover

However, fashion is a risky business. Is the performance sustainable as the footprint increases and challenges the bigger, well established names?

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**6.b. P/L, B/S shifts****(9 mins, 5 marks)**

**[Marking scheme: 6.b. and 6.c. expect minimum 5 credible comments for each part and evidence that 6.c. follows on logically from 6.b.]**

The business model shift works through to the P/L and B/S in fundamental ways including:

- P/L - one currency to several currencies
- few large customers to many small customers
- probably more debt so higher interest costs
  
- B/S - more funding, eg bank, ORB, AIM (looks more like equity risk)
- more working capital intensity
- more fixed asset intensity

**6.c. Finance/treasury role****(9 mins, 5 marks)**

Structure needs to comprise the following functions:

- Currency
- Funding and interest risk (+ ORB, AIM?)
- Working capital (funding source)
- Trade finance
- Cash management
- Liquidity and counterparty risk
- Bank relationships
- Big increase in amount and complexity of banking services
- Big increase in MIS needs, both business and finance.

**6.d. Future viability****(3.6 mins, 2 marks)**

**[Marking scheme: minimum 3 credible observations]**

- The company is in very good shape now but is making a fundamental shift in business model.
  - E'sales and overseas activities are two big steps at once.
  - During the transition from generating revenue indirectly through third party outlets to generating revenue directly from internet retail customers the business could stall in terms of customer franchise.
  - And operationally the new business model is much more complex.
  - Looks like equity risk, with JV or trade sale as less risky alternatives for realising the business potential.
-

**Question 7****[25.2 mins, 14 marks]****[Marking scheme: 7.a. and 7.b. – see superscripts]****7.a. Financial impact of sales collateral****(5.4 mins, 3 marks)**

- as price increases, collateral increases via variation margin while related contract revenue is fixed <sup>2</sup>
- but some relief from new sales at higher price from customers <sup>1</sup>
- and from suppliers if subject to past margin calls

**7.b. Financial impact of purchases collateral****(5.4 mins, 3 marks)**

- sellers to Chemco will also require collateral via variation margin to mitigate their “replacement” cost if price falls <sup>2</sup>
- Chemco locked into forward contract but if plant starts up ahead of schedule and can sell output, there is some relief <sup>1</sup>
- and some also from customers if subject to past margin calls

**7.c. Price volatility impact on liquidity (9.0 mins, 5 marks)**

**Marking scheme: one each for (i) and (ii) and two for a calculation or narrative with ingredients of (iii), (iv) or (v); would expect a mention of the necessity for stress testing; room here also for a broader discussion including Chemco’s performance and financial structure, earning a further mark.**

- (i) Using one-tailed VAR confidence limit, there is a 95% probability that the price increase will not exceed:

$$£53 \times 1.65 \text{ std. dev.} = £87.45^1$$

$$\text{ie } \left( \frac{87.45}{239} \right) = 37\% \text{ price increase}$$

- (ii) The 99% confidence limit gives:

$$£53 \times 2.33 \text{ std. dev.} = £123.49^1$$

---

$$\text{ie } \left( \frac{123.49}{239} \right) = 52\% \text{ price increase}$$

- (iii) If the collateral variation margin applied to ALL sales and if all contracts had 12 months to run (worst case):

$$95\%: \frac{12}{12} \times £2410 \times 37\% = \underline{£892\text{m}}$$

$$99\%: \frac{12}{12} \times £2410 \times 52\% = \underline{£1253\text{m}}$$

- (iv) If contracts are ALL 12 months but staggered evenly through the year:

$$95\%: \frac{1}{12} \times 2410 \times \left[ \frac{12}{12} + \frac{11}{12} + \dots + \frac{2}{12} + \frac{1}{12} \right] \times 37\%$$

$$= 1,305 \times 37\% = £483\text{m}$$

$$99\%: = 1,305 \times 52\% = £679\text{m}$$

- v) If ALL contracts are 6 months and staggered:

$$95\%: \frac{1}{12} \times 2410 \times \left[ \frac{6}{6} + \frac{5}{6} + \dots + \frac{2}{6} + \frac{1}{6} \right] \times 37\% =$$

$$= 703 \times 37\% = £260\text{m}$$

$$99\%: = 703 \times 52\% = £366\text{m}$$

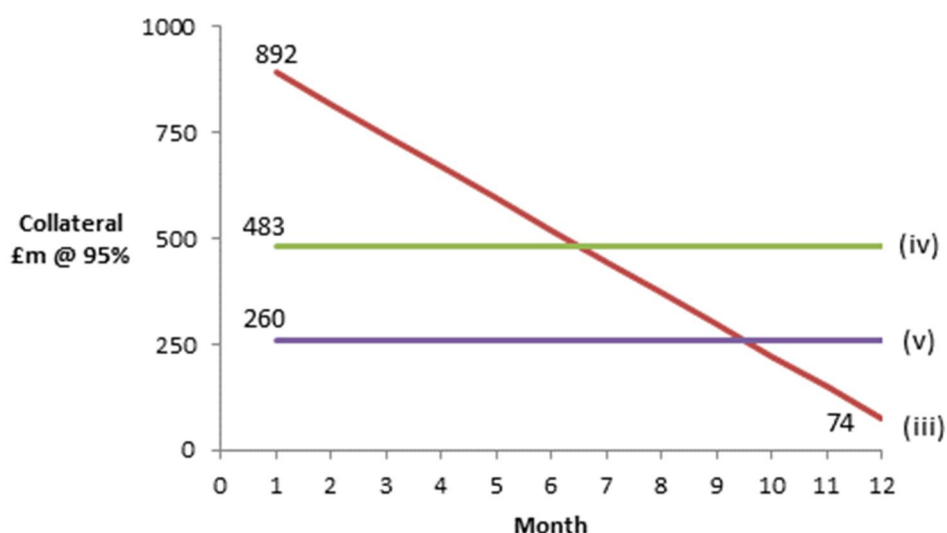
- vi) The upper price range over the past 4 years has gone to £410, ie (410 – 239 =) 171 above the average. Stress testing Assumptions (iii) - (v) with this price:

$$(iii) \quad 2410 \times \frac{171}{239} = £1724\text{m}$$

$$(iv) \quad 1305 \times \frac{1}{2} \times \frac{171}{239} = £934\text{m}$$

$$(v) \quad 703 \times \frac{171}{239} = \text{£}503\text{m}$$

Most of the numbers above are very significant in the context of Chemco's cash balance. . . . and some possibly terminal!



This graph summarises the results of the preceding calculations at (i), (ii) and (iii) at the 95% level:

- (iii) If all contracts are 12 month and all start at 01 January, then collateral call is potentially highest at start of year and falls away to year end.
- (iv) However if the 12 month contracts are evenly staggered throughout the year, the potential call is lower still but stable over the year.
- (v) If all contracts are 6 month and staggered then the potential call is lower still but stable over the year.

The table overleaf pictures how the collateral builds up: for (iii) the contracts survive for the full 12 months so the aggregate remaining diminishes; for (iv), (v) the oldest contract falls off and a new one comes in monthly, so the aggregate stays constant.



CHEMCO COLLATERAL VOLATILITY																		
			Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12				
	START DATE	SALES																
(iii) All 12 mth contracts, all start 01 Jan.	01.01.0021	2410.00	200.83	200.83	200.83	200.83	200.83	200.83	200.83	200.83	200.83	200.83	200.83	200.83		2410.00	0.37	891.7
																	0.52	1253.2
(iv) All 12 mth contracts, all staggered.	01.01.0021	200.83	16.74	16.74	16.74	16.74	16.74	16.74	16.74	16.74	16.74	16.74	16.74	16.74		200.83		
	01.12.0019	200.83	16.74	16.74	16.74	16.74	16.74	16.74	16.74	16.74	16.74	16.74	16.74		184.10			
	01.11.0019	200.83	16.74	16.74	16.74	16.74	16.74	16.74	16.74	16.74	16.74	16.74		167.36				
	01.10.0019	200.83	16.74	16.74	16.74	16.74	16.74	16.74	16.74	16.74	16.74		150.63					
	01.09.0019	200.83	16.74	16.74	16.74	16.74	16.74	16.74	16.74	16.74		133.89						
	01.08.0019	200.83	16.74	16.74	16.74	16.74	16.74	16.74	16.74		117.15							
	01.07.0019	200.83	16.74	16.74	16.74	16.74	16.74	16.74		100.42								
	01.06.0019	200.83	16.74	16.74	16.74	16.74	16.74		83.68									
	01.05.0019	200.83	16.74	16.74	16.74	16.74		66.94										
	01.04.0019	200.83	16.74	16.74	16.74		50.21											
	01.03.0019	200.83	16.74	16.74		33.47												
	01.02.0019	200.83	16.74		16.74													
		2410.00	200.83	184.10	167.36	150.63	133.89	117.15	100.42	83.68	66.94	50.21	33.47	16.74	1305.42	1305.42	0.37	483.0
																	0.52	678.8
(v) All 6 mth contracts, all staggered	01.01.0020	200.83	33.47	33.47	33.47	33.47	33.47	33.47								200.83		
	01.12.0019	200.83	33.47	33.47	33.47	33.47	33.47									167.36		
	01.11.0019	200.83	33.47	33.47	33.47	33.47										133.89		
	01.10.0019	200.83	33.47	33.47	33.47											100.42		
	01.09.0019	200.83	33.47	33.47												66.94		
	01.08.0019	200.83	33.47													33.47		
		1205.00	200.83	167.36	133.89	100.42	66.94	33.47							702.92	702.92	0.37	260.1
																	0.52	365.5

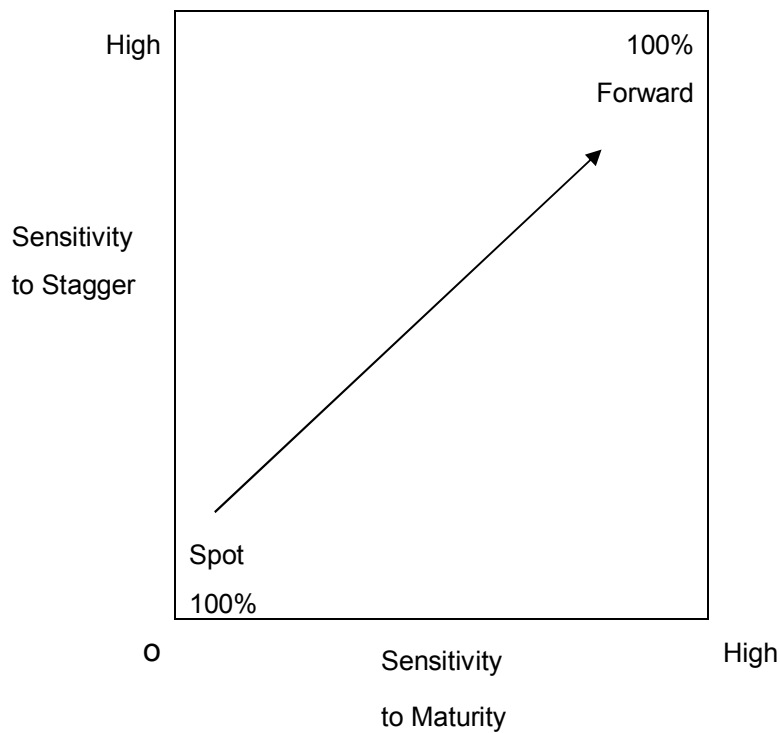
**(d) Mitigants**

**(5.4 mins, 3 marks)**

**[Marking scheme: see superscripts]**

- (i) The analysis at (c) highlights the significance of staggered contract dates and shorter ~ v ~ longer contract periods

Conceptually, the shorter the contracts and the greater the stagger, the less is the potential collateral exposure.



Spot: If all contracts are spot there is no sensitivity to Stagger or maturity

Forward: If all contracts are forward there is much sensitivity to Stagger and maturity

- (ii) Endeavour to renegotiate contracts with counterparties.
- (iii) Work to restore investment grade status.

**Examiner's Report****MCT Advanced Diploma - April 2014**

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**OVERALL SUMMARY OF PERFORMANCE**

	<b>General Exam</b>	<b>Case Exam</b>	<b>Combined</b>
Marks	43.9%	47.4%	45.3%
Questions	7	9	16
Students	9	6	15
Passes # @50%	3	3	6
Passes # @45%	4	4	8
Pass % (50%)	33%	50%	40%
Pass % (45%)	44%	67%	53%

Range of marks            28.5% to 55.7%            26.9% to 62.1%

**OVERVIEW**

This was a very disappointing set of results on all metrics, typified by the overall average mark of 45.3%. Only one paper out of 15 achieved a mark above 60% mark.

However, this was an unusual sitting, in that 11 out of 15 papers were from re-sit candidates, one of whom re-sat both papers. There were only 2 new candidates sitting both papers. All but one of the re-sits improved on their

previous marks and the average improvement was 8.5 marks, which is very good.

Performance on the Case exam was only slightly better than on the General exam. Performance across the two papers on the Corporate Finance and Funding questions was, unusually, better on average than performance on the Risk and Treasury Management questions, but only marginally. The detailed figures below show that an average score of 50% or more was achieved on only one question out of seven in the General paper and on four questions out of nine in the Case Study paper. The eleven questions on Risk and Treasury Management saw only one average pass mark.

<b>General exam</b>	<b>marks available</b>	<b>passes out of 9</b>	<b>average mark</b>
Q1	17	1	35%
Q2	24	2	40%
Q3	9	7	71%
Q4	12	2	41%
Q5	9	4	48%
Q6	15	4	44%
Q7	14	4	43%
<b>Case exam</b>	<b>marks available</b>	<b>passes out of 6</b>	<b>average mark</b>
Q1	9	4	56%
Q2	9	5	57%
Q3	10	5	56%
Q4	12	4	52%
Q5	14	2	42%
Q6	6	2	37%
Q7	15	3	44%
Q8	15	1	42%
Q9	10	4	45%

## **Examiner's Report - General Examination**

### **Question 1      Implications of differing shareholder risk and return metrics for company financial management.**

Only one candidate passed which was surprising, given that this simple set of questions was based on understanding some core corporate finance concepts (specific risk, systemic risk, dividend yield and share price growth), how they relate to each other and their implications for the financial strategy of managing shareholder risk and return. At the core of the question they were simply required to understand and be able to manipulate the following core equation;  $R_e = R_f + \beta (R_m - R_f) \equiv d/p + g$ . Many candidates could not seem to think about business risk issues that were not directly about treasury and financing and most preferred to answer different questions than the ones actually set e.g. implications for cost of capital, gearing etc.

### **Question 2      Quantifying the impact and impact of a rights issue plus financial re-structuring on a “zombie” company.**

This integrated question carried 24 marks. Overall there was very poor handling of the financial numbers combined with a sloppy or weak conceptual grasp, so there were only two passes. The early sub-questions, dealing with the rights issue calculations and its balance sheet implications, were reasonably well done. However, question 2d required forecasts of profits and cash flow based on the sort of messy, imprecise data that is typical of “the real world” which were really badly done. In contrast, 2e was an open-ended question about re-structuring the debt and pension deficit, but most candidates showed little imagination or appetite in answering it.

### **Question 3      When and how to use different DCF valuation methods.**

This was a very technical question about correct application of six different variations of DCF valuation techniques. The answers here were mainly very good, with good identification of equity versus enterprise valuation methods, plus associated equity cost versus WACC discount rates. The main criticism would be the lack of refinement in the answers e.g. varying the level of WACC or equity cost depending on the level of risk involved, also the implications of

stability versus volatility in cash flows for the method used.

**Question 4**      **Currency risks associated with the disposal of an overseas subsidiary.**

This two-part Question asked for (a) identification of the currency risks and (b) suggestions for managing it. Apart from the risk associated with the timing of the “at purchase” settlement, the other issues were the uncertainties about deferred payment amounts, the status of the swap and whether or not the local borrowing in X-land constitutes a risk for CamCo. So, in aggregate the currency complexities go well beyond Camco’s traditional transaction risk hedging expertise. Of the four Questions on risk and treasury management this was the least well answered with only two passes out of nine.

**Question 5**      **For a fixed rate bond issue, is the margin over the interest rate swap of the same maturity a good indication of the issuer’s likely credit margin on a bank loan?**

This question generated a wide range of responses with three of the four passes scoring over 60% and three of the fails scoring under 40%. There were two main parts to the Question (a) the assumptions that would have to hold about lenders and investors for the margin over the swap to be a good indicator of loan credit margins and (b) how Basel 3 might affect this relationship. For (a) to be true then the lenders’ and investors’ risk-reward preferences need to be similar; for (b) Basel 3 will significantly distort the lender’s preferences and the result, already evident, is a further disintermediation of bank lending, particularly for larger longer-term borrowers.

**Question 6**      **Identifying the impact of a radical shift in business model on the balance sheet and profit and loss of a small company, along with the implications for treasury activities.**

This four-part Question asked for (a) a brief evaluation of the company’s financials before the business model change, (b) the financial impact of the proposed change on B/S and P/L, (c) the treasury implications and (d) an opinion on the future viability of the business.

Part (a) was very well done by more than half and badly done by the rest. Parts

(c), (d) and (e) were well done by the four who passed this Question, but badly by the rest including one who did not respond. This was a very straightforward MCT-type Question and therefore a disappointing result.

**Question 7**    **For a company transacting sales and purchases of a commodity-type product on fixed price contracts up to 12 months duration, the impact on the company's liquidity of collateral calls demanded by its trading counterparties and how that impact might be mitigated.**

Almost everyone who attempted this Question (two didn't) passed the first two parts easily and could understand how movements in price triggered collateral calls from the company's counterparties which were protecting themselves against failure on the company's part to execute their fixed price term contracts. However when it came to translating standard deviation of price into impact on the company's liquidity only a third of candidates succeeded and suggestions for mitigating the impact were even scarcer. So again only four out of nine passed.