

The Association of Corporate Treasurers

Examination Paper, Solutions and Examiner's report

Paper: MCT General Exam

APRIL 2010

Answer **ALL SEVEN COMPULSORY** questions

QUESTION 1

[Total 19 marks]

The American Cheese Co. (ACCO) Inc has just launched a bid for The British Chocolate Co. plc (COCO) which has been dismissed as “derisory” by the CE of COCO. S & P has issued a warning on the ACCO rating (“credit watch with negative implications”) and leading ACCO shareholders have publicly warned ACCO not to over-pay so as to threaten their interests. Many of COCO’s existing shareholders are not permitted to hold USD-denominated shares.

Background Information on COCO/ACCO

- The ACCO offer is 300p cash plus 0.2589 ACCO shares for one COCO share.
- The 52-week range for ACCO shares is 20.81 to 29.84. On the announcement of the bid the shares fell by \$0.25 to \$28.75.
- COCO had 1361 million 10p shares outstanding as at 31st December 2008.
- The 52-week range for COCO shares is 484.25p to 819.50p. Immediately before the announcement of the bid the shares closed at 570.50p. Since the announcement they have averaged 800p.
- The USD/GBP exchange rate is currently 0.6013 but over the previous three months the range has been 0.5867 to 0.6366 with no particular discernible trend.
- In response COCO revised its revenue growth target range, for the next four years upwards from 4%/6% to a new range of 5%/7%. It is also targeting margins to improve to 17% instead of 15% over the same period. The third quarter eps was up by 16% on the equivalent figure for 2008 (22.6p).
- Based on its third quarter results ACCO guidance on its 2009 eps was up from \$1.93 to \$1.97 (2009 - \$1.95).

ACCO-COCO Financial Data

	GBP/USD	USD/GBP rate				
		COCO 2009	ACCO 2009	COCO 2009		
	GBP	USD	USD			
Balance Sheet						
Net debt	1,887	18,242	3,138			
Shareholders' funds	3,534	22,200	5,877			
Total book capital	5,421	40,442	9,015			
Income Statement						
EBITDA	926	5,987	1,540			
EBIT	484	4,914	805			
Net interest paid	(25)	(1,240)	(42)			
PBT	459	3,674	764			
Tax	(35)	(737)	(58)			
Tax rate	8%	20%	8%			
Minorities	(2)		(3)			
Earnings	422	2,937	702			
Dividends	(245)	(1,877)	(408)			
Share Data						
eps (pence/cents)	31.0	197.0	51.6			
dps (pence/cents)	18.0	125.9	30.0			
Earnings growth rate	16.0%	1.2%	16.0%			
Dividend growth rate	10.0%	12.0%	10.0%			
Share price (pence/cents)						
Number of shares	1,361	1,491	1,361			
Equity market capitalisation						
EV						
Ratios						
Net debt / total book capital	35%	45%	35%			
Net debt / EV						
EBITDA / Net interest	37.05	4.83	37.05			
Net debt / EBITDA	2.04	3.05	2.04			
Dividend cover	1.72	1.56	1.72			
Dividend yield						
P/E						
EV / EBITDA						
Cost of debt		6.2%				

Required:

- (a) From ACCO's perspective summarise the considerations and issues relevant to the choice of a debt/equity mix for funding the acquisition and the pros and cons of favouring one over the other. (6 marks)
- (b) Draw up the pro-forma Income Statement and simplified Balance Sheet of ACCO, assuming that the bid is successful. For purposes of your calculations assume that the debt/equity mix chosen by ACCO is in the same proportions as the cash/share elements of the initial offer, whatever the final price might be. Use the pro-forma provided. (8 marks)
- (c) Quantify the effect on ACCO's key creditor and shareholder metrics and comment on the results. (5 marks)

QUESTION 2

[Total 17 marks]

Your company is a medium-sized plc, involved in the manufacture and distribution of speciality chemicals. It is considering the financing structure for a new integrated chemical processing complex in a developing country in Sinlaysia in which it will have a 25% shareholding. The project life is expected to be 30 years and the loan life 25 years.

Your company's partners in the joint venture will be the Sinlaysian national oil company (50%), who will supply feedstock to the new venture, and an international plant contractor, Kventner (25%) who will build the plant.

Total investment is forecast at c. USD 500 million, which is at the top end of the typical capital investments size range for your company. The project company will be a new SPV, Sinlaychem. The sponsors' aim is to maximise the leverage and thereby reduce their own financial investment in the project.

Required:

- (a) Summarise the main, distinguishing features of project finance.**

(6 marks)
- (b) What financial metrics would the lenders to the project use to determine maximum leverage and why?**

(4 marks)
- (c) What requirements would the lenders to the project have, in principle, to make the Sinlaysia project a "bankable" deal?**

(7 marks)

QUESTION 3**[Total 10 marks]**

The London Stock Exchange has launched an electronic exchange for on-line, secondary market trading in bonds with denominations down to £1,000. Since the credit crunch with all its consequences, including all the measures taken to stimulate the UK economy, companies and wealthy individual investors are looking to fixed interest markets respectively to raise finance and to invest. Traditionally British private investors have put their money in the bank or in the stock market while mid-sized corporates have relied on bank loans for most of their financing needs. Fixed income has been the domain of institutional investors and the biggest companies.

Required:

- (a) **Summarise the relative attractiveness, for mid-corporates, of bonds compared with traditional bank finance.**
(5 marks)
- (b) **Summarise why private investors might be considering bonds as opposed to their traditional investments.**
(5 marks)

QUESTION 4**[Total 14 marks]**

Net working assets (NWA) for manufacturing companies typically represent a significant element of capital employed. And for expanding manufacturing companies the capacity to fund increases in working capital (ahead of new sales) can severely constrain the rate of growth.

Your company, Conco, which manufactures standard ranges of mechanical and electrical controls for chemical process plants has NWA representing 21.3% of sales revenue and is in a rapidly growing market. You have been asked to lead a project to significantly improve the management of NWA.

Required:

- (a) **What business functions would you need to recruit to the project team?**

(4 marks)

- (b) **What actions would you be requesting from each function in order to better manage NWA?**

(10 marks)

QUESTION 5

[Total 13 marks]

The lack of regulation in parts of the derivatives market and the lack of a single regulator with oversight over the many different types of financial institutions active in these markets - from traditional banks to insurance companies - is one reason leverage in the financial system increased dramatically in the past decade.

Consequently regulators in the EU and US are pushing ahead urgently with proposals that derivative transactions which are currently OTC (over the counter) should be converted to a standardised form that can be exchange traded, centrally cleared and where possible novated to a CCP (central counterparty). 'Novation' in this instance means that the single legal contract between the two OTC counterparties is replaced by two legal contracts between the first counterparty and the exchange (CCP) and the CCP and the second counterparty. Each party to a transaction would then have credit exposure to the CCP (rather than to each other) and the CCP would require daily margin payments, as is the case for exchange traded futures, to protect its position.

It has been argued by some, including the ACT, that corporates, which comprise only about 10% of the market, should be excluded. However such an exclusion clause has recently been dropped in key draft legislation and so it is probable that as part of the global tightening of financial regulatory frameworks corporate OTC derivative deals in interest rate and fx derivatives will in future be transacted through CCPs.

Required:

- (a) **What would be the implications of the switch to CCPs for a typical manufacturer, exporting 50% of its output priced in foreign currency and funded with floating rate bank debt of which half is fixed via interest rate swaps (IRS)? Where possible, quantify your answer, stating clearly your assumptions.**
(10 marks)
- (b) **What other treasury/finance issues do you think might arise?**
(3 marks)

QUESTION 6**[Total 13 marks]**

Buyrite, one of the UK's largest supermarket chains, has been providing retail financial services to its customers for more than ten years via a joint venture with United Bank (UBK).

During the recent financial crisis its deposit book has benefited from the public's loss of faith in the banking system.

Buyrite has now decided to buy out UBK and aims to become "a full service retail bank" in order to cash in on "faster growing markets than foods" by more actively cross-selling to its large retail customer franchise, 15m of whom already have Buyrite Clubcards. Buyrite's product offering will major on savings and deposits, credit cards and mortgages.

Typical financial profiles for a supermarket and a retail bank are shown below, each B/S and P/L item expressed as percent of a balance sheet totalling 100.

SUPERMARKET		RETAIL BANK	
FIXED ASSETS	88	FIXED ASSETS	1
STOCK, DEBTORS	8	LOANS <i>[longer maturities]</i> (Mortgages, credit cards, consumer finance, etc)	79
CASH & INVESTMENTS	4	LIQUID ASSETS <i>[cushion for maturity mismatch]</i>	20
	<hr/> 100 <hr/>		<hr/> 100 <hr/>
EQUITY	50	EQUITY CAPITAL <i>[cushion for</i>	5
DEBT	30	DEBT CAPITAL <i>loan losses]</i>	2
TRADE CREDITORS	15	FUNDING <i>[short maturities]</i> (Customer depos 100% to zero Wholesale funds zero to 100%)	88
OTHER	5	OTHER	
	<hr/> 100 <hr/>		<hr/> 100 <hr/>
TURNOVER	170	TURNOVER	-
PROFIT BEFORE TAX	7	PROFIT BEFORE TAX	1

Retail banks fund with customer deposits because, although contractually 'on call' or very short term, they are behaviourally very "sticky" (except in crisis!) The shortfall, if any, in customer deposits is usually funded by short term (less than 3 months) interbank because it is cheaper than long term and usually very liquid (again, except in crisis).

Buyrite's plan is to drive up banking profits to between 10% and 15% of total profits.

Required:

- (a) In business strategy terms how would you characterise Buyrite's move to 100% owned full-service retail banking?

What are the business risks?

(If you wish, use a business analysis model to illustrate your answer)

(4 marks)

- (b) What size balance sheet does the bank need, relative to the supermarket, to achieve Buyrite's plan for increased profits?

(2 marks)

- (c) Supermarket balance sheet is £10bn. Based on your answer to (b), what level of funding would Retail Bank need to target?

(2 marks)

Three years ago Storeco, a major UK chain store, disposed of its long established financial services operation, in part because of the high-level of wholesale finance usually required to fund customer loans in the absence of adequate levels of retail customer deposits.

Required:

- (d) What funding strategy should Buyrite use to avoid Storeco's problem? Is this affected by product offering?

(5 marks)

QUESTION 7**[Total 14 marks]**

Many corporates now commonly use VAR and larger corporates will use portfolio VAR, scenario analysis and (less commonly) Monte Carlo Simulation for treasury risk analysis, eg in the areas of currency, interest rates, cashflow forecasts and project appraisal.

Required:

- (a) Briefly characterise each of these techniques.**
(4 marks)
- (b) During the recent financial crisis what, if any, would you consider to be the major failing of each technique?**
(4 marks)
- (c) Looking ahead, what are the implications of your response to (b) for treasury risk management? Where possible, relate your comments to specific types of risk.**
(6 marks)

GENERAL EXAMINATION - NOTE FORM ANSWERS

QUESTION 1

[19 marks]

1.a.

(6 marks : 11 mins)

Marking - I have 28 points but give $\frac{1}{3}$ mark for each good point.

General considerations

- Size of all-up acquisition cost ¹ relative to existing Balance Sheet and ² market cap. / EV.
- Allow for increase in price over the course of the acquisition battle, plus costs of both companies.³
- “Normal” company policy on appropriate level of gearing given level and type of sector risks.⁴
- Impact of acquisition on pro-forma ratios for balance sheet leverage, interest cover, income leverage.⁵
- Impact of a possible cost savings/synergies.⁶
- Set maximum and minimum debt figures, acceptable to company and “the markets”. Rating agencies particularly important.⁷

Pros and Cons of Debt versus Equity

Debt – relatively cheap ⁸ (tax shelter), but cost of big ticket bridging ⁹ finance escalates with time if not re-financed with e.g. capital market debt. ¹⁰ Easy to raise normally, ¹¹ confidentiality, ¹² flexible as to amount, ¹³ final bid cost not known at the outset but will be higher than initial bid, also bid may fail so no finance needed, ¹⁴ except for costs. But syndicated facilities still have to be put in place beforehand. ¹⁵

But, too much debt impacts on credit rating or credit status ¹⁶ via interest cover, balance sheet or income leverage. Also represents an increased risk to existing shareholders. ¹⁷

Shares – improves credit status, ¹⁸ particularly advantageous given all the uncertainties ¹⁹ about future prospects that surround a big acquisition. More expensive in terms of all-up ²⁰ cost but dividend yield less ²¹ so cash cost could be quite low. Impact on dividend ²² cover and eps ²³ is critical as too much equity could be dilutive. Relative P/E ratios determine immediate eps dilution, as does E/P yield of acquirer relative to after-tax cost of debt. ²⁴

Equity more ²⁵ onerous to raise, but share offer as part of total consideration is an attractive alternative to simply using rights issue. ²⁶ Willingness of COCO shareholders to accept ACCO shares is therefore important. ²⁷

Rights issue can be announced along with the bid but complicates matters also must allow for failure of bid ²⁷ - use monies elsewhere or make issue conditional. ²⁸

1.b.

(8 marks : 14 mins)

Marking - I have 26 detailed points so 1/3 mark for each step in the calculations.

- See first half of table in Answer 1.3 for pro-forma figures for combined company. Allow for translation of COCO to USD, effect of acquisition debt and acquisition equity, then consolidate.
- USD/GBP rate complicates matters in many ways, most immediately via the value and attractiveness of the share element of the offer to COCO shareholders, but also impact on immediate and future eps. Need to choose an exchange rate and ideally comment on it.
- Also need to choose share prices for each company and ideally discuss.
 - Offer is currently worth $300p^1 + (0.2589 \times \text{price } 2875 \times \text{fx rate } 0.6013)p^2 = 748p$, ³ but shares are at $800p^4$ so ACCO will probably have to pay this, so use as acquisition price.
 - So acquisition cost is $1,361\text{mill}^5 \times £8 = £10,888\text{mill}^6 = \$18,107\text{mill}^7$
 - Cash/shares mix of initial offer is $300/748 = 40\%$, so debt $40\%^8$ (\$7,243), equity 60% (\$10,864) ⁹
 - On consolidation add debt of both ¹⁰ companies plus new acquisition ¹¹ debt = \$28,623mill. ¹²
 - Shareholders' funds = ACCO's existing equity plus new share capital raised/issued ¹³ = \$33,064 ¹⁴
(N.B. exclude COCO's equity) ¹⁵
 - Ex-post EBITDA = \$5,987mill + \$1,540mill + \$7,527mill. ¹⁶
 - EBIT also straight addition, assuming no ¹⁷ synergies = \$4,914mill + \$805mill = \$5,719mill. ¹⁸
 - The acquisition debt of \$7,243mill at 6.2% costs interest of \$449mill. ¹⁹ After tax at 20% ²⁰ reduces after-tax earnings by \$359mill. ²¹
 - So PBT = \$3,674mill + \$764mill - \$449 = \$3,989mill, ²² and after-tax earnings of \$3,280. ²³
 - New number of shares = $1,491 + (0.2589 \times 1,361) = 1,491 + 352^24 = 1,843^25$
 - Eps therefore $\$3,280 / 1,843 = \1.78 . ²⁶

1.c. See second half of table below.

(5 marks : 9 mins)

Marking - I have 19 points so 1/3 mark for each good point.

Shareholders - Eps is diluted ¹ by 10%, (197 to 178) ² P/E increases ³ (14.6 to 16.4) ⁴ – NB low P/E company (14.6) buys high ⁵ P/E company (25.8). Dividend cover is reduced ⁶ from 1.56 to 1.41 (low), assuming dps of 125.9 cents. Dividend yield stays much the same at 4.3%. ⁷

Credit - Book leverage stays much the same at 46%, ⁸ debt/EV increases from 30% to 35%, ⁹ EBITDA interest cover reduces from 4.83 to 4.35 ¹⁰ (all still good) ¹¹ but debt/EBITDA increases from 3.05 to 3.8 (not so good). ¹²

- EV of ACCO ex-post is the sum of the two companies' EVs ex-ante, assuming i) ACCO's share price holds (does the market like the deal?), ii) that COCO is worth what was paid and iii) that synergies cover deal cost of both companies (all are important assumptions). ¹³
- ACCO ex-ante market cap. = \$28.75 x 1,491mill shares = \$42,866mill, ¹⁴ plus debt of \$18,242 so EV = \$61,108mill. ¹⁵
- EV of COCO = \$18,107mill ¹⁶ + debt of \$3,138mill = \$21,246mill. ¹⁷
- Total EV = \$82,354mill. Less total debt of \$28,623mill gives market cap. of \$53,731mill. ¹⁸
- Share price = \$53,731 / 1,843 = \$29.15 (was \$28.75). ¹⁹

(Relevant to Question 1.b.)

ACCO-COCO Financial Data		USD/GBP rate			debt %	
			0.6013		40%	
	COCO 2009	ACCO 2009	COCO 2009	Acquisition	Acquisition	ACCO after
GBP/USD	GBP	USD	USD	Shares USD	Debt USD	USD
Balance Sheet						
Net debt	1,887	18,242	3,138		7,243	28,623
Shareholders' funds	3,534	22,200	5,877	(5,877)	10,864	33,064
Total book capital	5,421	40,442	9,015	(5,877)	18,107	61,688
Income Statement						
EBITDA	926	5,987	1,540			7,527
EBIT	484	4,914	805			5,719
Net interest paid	(25)	(1,240)	(42)		(449)	(1,731)
PBT	459	3,674	764		(449)	3,989
Tax	(35)	(737)	(58)		90	(705)
Tax rate	8%	20%	8%		20%	18%
Minorities	(2)		(3)			(3)
Earnings	422	2,937	702		(359)	3,280
Dividends	(245)	(1,877)	(408)	408	(444)	(2,321)

(Relevant to Question 1.c.)

Share Data						
eps (pence/cents)	31.0	197.0	51.6	(51.6)	(102)	178.0
dps (pence/cents)	18.0	125.9	30.0	(30.0)	126	125.9
Earnings growth rate	16.0%	1.2%	16.0%			
Dividend growth rate	10.0%	12.0%	10.0%			
Share price (pence/cents)	800	2,875	1,330			2,915
Number of shares	1,361	1,491	1,361	(1,361)	352	1,843
Equity market capitalisation	10,888	42,866	18,107		(7,243)	53,731
EV	12,775	61,108	21,246		-	82,354
Ratios						
Net debt / total book capital	35%	45%	35%			46%
Net debt / EV	15%	30%	15%			35%
EBITDA / Net interest	37.05	4.83	37.05			4.35
Net debt / EBITDA	2.04	3.05	2.04			3.80
Dividend cover	1.72	1.56	1.72			1.41
Dividend yield	2.3%	4.4%				4.3%
P/E	25.8	14.6	25.8			16.4
EV / EBITDA	13.79	10.21	13.79			10.94
Cost of debt		6.2%			6.2%	

QUESTION 2**[17 marks]****2.a****(6 marks : 11 mins)**

Marking - I have 18 points but there could be more, so ½ mark for each good point.

- Banks look only to project co for servicing, repayment and security ¹ - ideally no recourse ² to sponsor companies for repayment
- Debt (and assets) preferably “off-balance sheet” of corporate sponsors, ³ but rating agencies may add it back ⁴
- Sponsors give various contractual ⁵ undertakings to project co/banks but not financial ⁶ guarantees
- Usually high leverage ⁷ and complex debt structure ⁸
- Costly and time-consuming process ⁹ of investigation and negotiations
- More expensive debt ¹⁰ because of high leverage, costs of due diligence etc
- Essentially cash flow lending ¹¹
- Very large projects ¹² with diverse pattern of risks ¹³ and often several sponsors
- Potentially stable contractual ¹⁴ pattern of cash flows
- Long time-scale (20-30 years) ¹⁵
- Often government involvement as a sponsor ¹⁶

- Complex contractual structure to achieve “risk sharing” ¹⁷ among the various counterparties.
- Cash receipts and payments independently controlled ¹⁸ (the “cash cascade”)

2.b

(4 marks : 7 mins)

Marking - I have 12 points so $\frac{1}{3}$ mark for each good point.

- Loan to cost approaches are irrelevant, since the maximum is probably close to 100% ¹
- Loan to economic value (NPV) is the key ² concept, monitored via multi-period cover ratios ³ - over a) loan life (LLCR), ⁴ b) project life (PLCR) ⁵ “The value of the project to lenders” ⁶

ie
$$\frac{\text{NPV of free cash flows before debt service}^*}{\text{Loan outstanding}} \quad 7$$

* Discounted at average cost of debt ⁸ over a) loan life and b) project life

- Range 1.5 to 2.0 depending on level of risk. ⁹
- Tested for each year, forward looking ¹⁰
- Also Annual Debt Service Cover Ratio (ADSCR) ¹¹ for each year of the project

$$\frac{\text{Annual Free Cash Flows}}{\text{Annual Interest \& Repayment}} \quad 12$$

2.c

(7 marks : 13 mins)

Marking - I have 19 points, and there could be more, so $\frac{1}{2}$ mark for each good point.

- A minimum level of ¹ equity and/or subordinated debt from sponsors
- Legally binding undertakings ² from project sponsors and other contracted parties to offset identified project risks ³
- Fixed price design-and-build ⁴ construction contract from contractors (Kventner)
- Maintenance contract with Kventner, ⁵ with liquidated damages, to minimise effects of any plant breakdown operating inefficiencies. ⁶
- Feedstock supply ⁷ contract (25 years) with SNOC to assure volumes and ⁸ prices of feedstock

- Off-take contract from our company ⁹ with price and volume formula ¹⁰ to lock in (a percentage of) revenues for the new venture
- Formal government permissions ¹¹ as required
- O&M contract ¹² from our company to ensure best-practice operation of plant, dovetailing with the Kventner contract
- Possibly ¹³ stand-by cash facilities or limited guarantee of same, in case of cash flow deficits - from all sponsors
- Bank or independent control via documentation of all cash ¹⁴ disbursements eg opex, capex but especially payment of dividends and interest to sponsors ¹⁵ and repayment of capital to sponsors
- Independent consultants' ¹⁶ reports on project viability, due diligence, project model etc.
- Environmental audit ¹⁷
- Insurances, as appropriate ¹⁸
- Financial hedging, ¹⁹ depending on detailed debt structure

QUESTION 3

[10 marks]

Marking - I have 15 points so ½ mark for each good point.

3.a Corporates: bank finance - scarcity, ¹ wider spreads, ² increased fees, ³ shorter maturities, ⁴ less flexibility, ⁵ potentially onerous security and covenant requirements, ⁶ end of relationship banking? ⁷

bonds - more onerous information and procedural requirements, ⁸ simpler security, ⁹ rating required, ¹⁰ unfamiliarity to ¹¹ mid corporates, more important than ever to deliver sustainable ¹² cashflows. Inherently less flexible, ¹³ no contact with investor, ¹⁴ problems/crisis more difficult to manage. ¹⁵ Minimum critical issue level. ¹⁶

(5 marks : 9 mins)

Marking - I have 15 points so ½ mark for each good point.

3.b Investors: bank deposit interest rates at an all-time low ¹ (negative in real terms), ² reduced ³ security of bank deposits for larger investors, general loss of confidence ⁴ in banks and associated goodwill.

shares - low, reduced ⁵ dividend yields and less certain ⁶ dividends, recent volatile ⁷ prices resulting in increased risk and reduced confidence in ⁸ capital growth.

bonds - higher yield ⁹ than banking products.

Higher ¹⁰ but more understandable ¹¹ risk? more accessible ¹² now with smaller denominations

- lower risk ¹³ than shares in the same companies, more ¹⁴ security

- hopefully ¹⁵ reasonable liquidity compared with bank deposit.

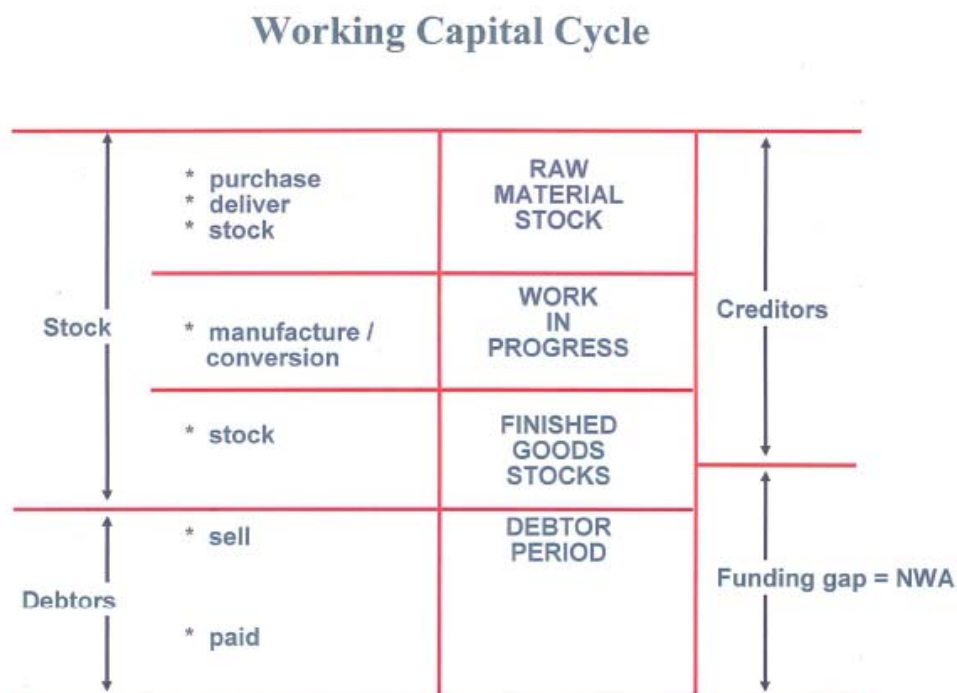
(5 marks : 9 mins)

QUESTION 4 Working Capital Management

[14 marks : 25 mins]

Background

Working capital cycle for a manufacturing company is shown diagrammatically below:



The level of NWAs, expressed as % annual sales, varies enormously for different types of business. For instance engineering manufacturers might run at + 20% to + 30% and retailers at - 2% to - 8%.

The **characteristics** of NWA (stocks, debtors, creditors) are determined by several functional areas as exemplified below, and can be altered by day-to-day management responses (first level) and by longer term strategic responses (second level).

(a)WHAT BUSINESS FUNCTIONS? (4 marks : 7 mins)	(b) WHAT ACTIONS? (10 marks : 18 mins)	
	First Level Responses	Second Level Responses
Procurement	Terms of trade “Just in time” delivery	Supply chain Preferred Suppliers
Operations - Production Control - Manufacturing/Technical	Raw materials/parts stock Progress control (W.I.P.) Finished good stock	Plant layout Product handling, processing Quality control, shrinkage Manufacturing plant design Outsourcing
Logistics/Distribution	Delivery schedules	Transport/depot infrastructure
Sales Products/Markets - Product/Technical - Sales - Marketing	Terms of trade Forecasting	Product design, value engineering Material substitution Customer service

Financial Control	Creditor, debtor control	Factoring
Technical Control		Stock management/obsolescence
Legal	Standardise contracts	
I.T.	Routinise and 'real time' processes	

Some companies go to a third level, eg see Global Turbines PLC [MCT Case Exam October 2008], establishing JVs with suppliers which pay up front to participate and bear the cost of developing new engine parts in return for a share in profits several years later if the engine is successful.

Candidates adopted one of three approaches to answering this question, possibly reflecting degrees of industrial experience: to discuss accounts receivable, accounts payable and credit control; to discuss stocks, debtors and creditors; and to discuss the functional areas which could affect NWA, eg procurement, logistics, operations, sales and credit control. The approach used naturally dictated the business functions represented in the project team and the actions taken. The most prevalent blind spot was "operations", ie the production process and the related engineering dimension.

For a pass on Part (a) candidates needed to mention functions, by whatever name, in four broad areas: procurement, operations, sales and financial control. Thereafter, marks were awarded for quality of narrative.

For (b), the criteria were coverage of the functional areas and credibility of the actions proposed.

QUESTION 5 OTC Derivatives & Central Clearing**[13 marks : 23½ mins]****(a) Implications for typical manufacturer****(10 marks : 18 mins)**

Both banks and corporates involved in OTC derivative transactions are already aware that there is a mark-to-market risk (replacement cost) if one or other party fails/fails to settle. This risk is typically quantified, taken into account under counterparty exposure management, and collateral provided if necessary. So in concept there is no change.

However, prior to the financial crisis the exposure quantification may have understated the risk and in some cases (eg long dated interest rate swaps) volatility may have turned out to be much higher than expected.

And much more importantly, there is a potentially significant liquidity (as well as processing) impact. Whereas before a bank counterparty marks a limit (eg under an ISDA agreement) to the corporate, the latter now has to pay (or receive) each day the change in mark-to-market value.

If the company is exporting on credit terms of one month, then a minimum of $(0.5 \times \frac{100}{12})\% = 4.2\%$ of annual revenue may be hedged forward and exposed to margin call, depending on the volatility of the currency. And some companies, eg , Global Turbines PLC [MCT Case Exam October 2008] hedge out as much as several years ahead, with correspondingly high potential margin calls. For example, if forward hedging one year ahead then $0.5 \times \frac{100}{2}\% = 25\% \sim v \sim 4.2\%$ may be hedged forward.

And if, for example, debt in relation to annual revenue is as for Disco in Question 6 ($\frac{30}{170} = 18\%$), and half of the bank debt is fixed via IRS, then a nominal amount of IRS equivalent to 9% ($0.5 \times 18\%$) of annual revenue is exposed to calls for collateral (for a one year IRS). If the IRS is for only one year and if the firm is leveraged then that “9%” could be “50%”. Again, some companies, eg those involved in long term projects, may hedge interest risk as long out as 20 years.

Corporates, unlike financial institutions, are unlikely to have securities to use as collateral, so credit lines are impacted.

In theory, margin calls will balance out over time but short term spikes still need to be covered.

For a pass, candidates needed to demonstrate that they understood the meaning of collateral in a derivatives context and to credibly quantify the collateral exposure for at least one of the instances quoted in the question (forward fx, interest rate hedge).

(b) Other issues

(3 marks : 5½ mins)

- Some companies may have much higher levels of derivatives in relation to sales, as noted in (a) above for fx transaction risk and for long term interest rate risk, because they forward hedge expected sales and in some cases use forward start swaps.
- What was a contingent risk for the OTC bank now becomes a potentially drawn credit risk for the (possibly different) lending bank.
- Accounting treatment will change eg swings on debt drawn for collateral reasons.
- Rating agencies may take a negative view of the potential 'on balance sheet' impact of mark-to-market changes.
- Potential for CCP to close out a hedge (bad news!)
- Corporate credit exposure on banks paid up (good news!)

For a pass on part (b), two good points (excluding liquidity).

QUESTION 6 Retail Stores & Retail Banking

[13 marks : 23½ mins]

(a) Business Model

(4 marks : 7 mins)

Buyrite is pursuing the Product-Market Matrix model, using its massive franchise in food supermarkets (retail) to distribute retail banking product. This is the "Product Development Strategy" (same market, related product).

Likely risks are:

- cost of product development
- achieving scale in a business with high fixed costs
- very competitive market
- loss of focus on core business
- capital and funding requirements
- regulated industry
- reputation risk from rejecting credit applications/recovering bad debts

These risks are mitigated by Buyrite's prior JV experience.

Buyrite already has a nationwide distribution network with 15m customers passing through each week, high name recognition and an embryo "joined up" base of banking customers from the UBK JV.

(b) Relative Size (2 marks : 3¾ mins)

Buyrite's goal is 10/15% of total profit to be provided by the bank.

The proformas for the supermarket and a bank (each B/S = 100) show PBT of 7 and 1 respectively.

By a happy coincidence, the 10/15% (say 12½%) of total profit, which is Buyrite's target for its proportion of profits from banking, is satisfied if retail profits are "7" and banking profits are "1", as for the proforma examples:

$$\frac{1}{7+1} = 12.5\%$$

So a bank with a balance roughly the same size as the supermarket ("100" as in the proformas) will deliver the target relative incremental banking profit.

(c) Level of Funding (2 marks : 3¾ mins)

Ref (b), the Retail Bank balance sheet needs to be about the same as the Supermarket, ie £10bn. Assuming this is large enough to adequately cover minimum fixed costs, then the equivalent funding required would be about £9bn (88% + 2% proforma).

This £9bn compares with the £3bn (proforma 30%) debt required in the supermarket business.

(d) Funding Sources (5 marks : 9 mins)

Storeco's problem was lack of customer deposits and a large slug of wholesale funding to support its loan book which distorted its B/S and which investors and analysts did not readily understand.

Apart from the Debt Capital 2%, the rest of the funding of 88% (just short of £9bn) is required for financing customer credit products.

Banks have traditionally financed customer credit with customer deposits first and then made up any shortfall with short term money market funds. The latter wholesale funding is currently problematic for most banks and there is both a strong regulatory drive and a commercial precautionary drive to revert to traditional core customer retail deposits.

So customer deposits would be the preferred source of funding. This would be the most prudent strategy . . . a liability-led bank.

[Elsewhere Buyrite has stated that it will only lend funds which it has raised from its deposit customers . . . the original retail bank!]

About half of candidates identified deposits as a desirable source, either attracted naturally to a well known and trusted name or competed for by proactive marketing.

Some candidates also pointed to strong supermarket cashflows as a source of funding but that would be wholly inadequate.

Buyrite does, however, still have a big maturity mismatch if it goes into mortgage lending. For this product an element of securitisation (when the market resurrects) would be justified particularly if Buyrite is cross-selling other (eg insurance) products to mortgagees.

Credit cards can also be securitised if markets re-open.

About half of the candidates also picked up on this maturity mismatch issue but instead of suggesting securitisation picked up instead on match-funding in the markets. This however would be very costly and render Buyrite uncompetitive.

So as for most of the smaller new banks emerging from the wreckage of the credit crunch the focus is on competing strongly for customer deposits and accepting the levels of growth that this will allow.

For a pass on (a) up to 2 marks for characterising the strategy, eg using a model, and up to 2 marks for a minimum of three credible risks.

For (b) 2 marks if in the right ball park, and a pass if the logic was right but the numbers adrift.

For (c), similar to (b).

For (d), some evidence of nine minutes thinking (= 5 marks!) and some recognition of the need for deposits as a primary source and of the problem of maturity mismatch.

QUESTION 7 Risk Metrics Post Financial Crisis

[14 marks : 25 mins]

(a) Characterisations

(4 marks : 7 mins)

For assuming a particular risk **VAR** specifies the maximum loss that will be experienced, for a given probability over a given time period, based on assumptions about historical data, eg for a USD/GBP currency exposure, the loss will not exceed USD 1m with a probability of 95% over 24 hours (usually a one-tailed distribution in finance).

Portfolio VAR: when aggregating risks, takes into account the correlations between the variables, resulting in a lower aggregate risk than if both variables are perfectly correlated, eg aggregate risk on USD/GBP and JPY/GBP currency positions, assuming the correlation factor between the two currency pairs is less than 1.0.

Scenario Analysis: the analysis of future events by considering the implications of outcomes which are judged to influence those events, eg using likely future economic scenarios for the UK and US economies in order to forecast the USD/GBP exchange rate. Stress testing is a form of scenario analysis as is “what if” analysis.

Monte Carlo Simulation: assign probability distributions to each of the variables within a scenario and use computer power to randomly access the distribution for each variable, thus creating thousands of scenarios each of which generates an “event” eg USD/GBP exchange rate. The model can then create a probability distribution of “events” based on the thousands of scenarios run, eg a probability distribution for USD/GBP exchange rates.

(b) Major failings during financial crisis

(4 marks : 7 mins)

VAR: this is a backward looking measure, using historical data assumed to be normally distributed. Under stress the predicted loss levels seriously underestimate the reality (model/data failure).

Portfolio VAR: under extreme stress, correlation between variables increases dramatically so the portfolio effect disappears (model/data failure).

Scenario Analysis: (and stress testing): risk analysts lacked imagination in devising scenarios and lacked persuasiveness in communicating with senior management, who in their turn often lacked understanding (process failure). [Also discounted in favour of more convenient VAR].

Monte Carlo Simulation: same weakness as scenario analysis, but disguised in the complexity of the Simulation model.

In short, VAR missed out on extreme outcomes, portfolio VAR missed out on increasing levels of correlation in extreme stress conditions, scenario analysis not extreme enough and Monte Carlo similarly disadvantaged.

(c) Implications

(6 marks : 11 mins)

VAR/Portfolio VAR is useful for “normal” conditions, provided that historical data covers the economic cycle and that the next economic cycle is not too different in character to the most recent one.

Scenario analysis is increasingly favoured, provided that the governance system positions risk professionals on a par with line managers at board level.

For stress testing/“what ifs” the concept of reverse stress testing is emerging. Instead of the potentially benign process of using familiar stress tests and “what if” scenarios for which mitigants have often already been implemented, imagine an extreme event (terminal fx loss) and reverse engineer scenarios which could have caused the event.

So implications are more to do with governance (process, challenge) than with technique, eg:

- Less blind reliance on models
- More focus on own judgement as reality check on model output
- Use of more than one model
- More critical assessment of scenarios used and more extreme downsides
- More testing of cashflow-based measures
- More attempts to get holistic view, see and understand inter-connections

Above, all recognise that this is a governance issue about process/challenge rather than techniques

For (a), one mark per credible characterisation of each technique.

For (b) one mark per technique for identifying a sensible failing eg VAR missing extremes, portfolio VAR ignoring increasing correlation in extreme stress, scenario analysis being too bland about assumptions and Monte Carlo disguising the same flaw under the cloak of technical sophistication.

For (c) three or four credible implications for a pass.

Examiner's Report

Question 1

Question content - a three-part question on the funding of a large US/UK acquisition in the confectionery industry, based on a cash and shares offer, plus a rights issue. The first part asked for a review of the main considerations in decoding the debt/equity mix of funding for the acquirer. The other two parts required the preparation of pro-forma Income Statement and Balance Sheet and comment on the acceptability or otherwise of the resultant credit and equity metrics

This demanding question was averagely answered with 8 passes out of 15 and an average mark of 53%. The failings of the weaker candidates nearly all stemmed from their poor conceptual understanding combined with inaccurate computations in the pro-forma accounts;

- a) missing out the debt of the acquired company
- b) adding in the shares of the acquired company
- c) adding the existing dividends of the two companies' shares
- d) adding USD and GBP amounts (rare)
- e) getting lost in calculating the combined EBITDA and EBIT instead of just adding
- f) missing the tax shelter effect on the new acquisition debt
- g) getting the new dividend payments all wrong (very common) – simply the new number of shares, which most calculated correctly, by the dividends per share of the acquirer (to be estimated but in line with recent dividend policy).
- h) pretty hopeless on the combined EV - basically the addition of the two ex-ante EVs, (plus possible synergies, minus any estimated “overpayment”) – but not simply the enlarged number of shares times the acquirer's share price.
- i) failure to recognise and understand the effect on eps of the low P/E acquirer paying a very high multiple for the acquired.

Despite these failings of weaker candidates the better candidates scored close to maximum marks, so the average score was 61% on the preparation of the pro-forma accounts.

Question 2

Question content - a straight-forward three-part question on project finance, covering general project finance characteristics, credit risk metrics for project finance lending and the credit protection required by lenders.

This proved to be a topic that only a minority of candidates seem to have studied so the rest were flying by the seat of their pants! We have never had to explain, nor should we, that “project finance” is not the same as “financing projects”. Only 6 out of 15 passed, and the average mark was 48%. The answers to the second and third part were very poor and the clearest indicator that candidates just did not understand the principles of project financing – e.g. debt/EBITDA suggested as a measure of project gearing! As to the protections that lenders require, quite a few candidates clearly did not know about the fundamental project finance principle of contractual risk sharing, so they could only talk about conventional corporate security and documentation.

Question 3

Question content - a two-part, very topical discursive question about the implications, for mid-sized corporates and private investors, of the LSE's opening of a bond market for smaller trades.

This question was generally well answered - the average mark was 70% with thirteen passes out of fifteen. Once again, however, there was a gulf between the length, quality, thoroughness and maturity of the answers of the best two thirds and those of the bottom third.

Summary of Questions 1 to 3

On these corporate finance questions the distribution was bi-polar. The overall average mark achieved was 54.6% with 7 passes out of 15, but the pass candidates averaged an excellent 66.4%, given the tough “number-cruncher” question 1. The remaining 8 candidates averaged only 44.2%, which is marginal pass territory. However, though indicating general weaknesses, these candidates needed less than 3 marks on average to pass this section, which carried 46 marks in total. It was generally the ignorance of project finance and imperfect understanding of merger finance, in particular, that did the damage, not an inherent lack of ability.

Question 4

Question content - Net working assets (NWA) for manufacturing companies, especially rapidly growing ones, represent a significant element of capital employed. As a treasury manager and project leader elect in such a company wishing to significantly improve the management of NWA students were asked to identify which business functions they would need to recruit to the project team and what actions they would be expecting from each function.

Eleven out of fifteen passed this question about fundamentals, with overall marks averaging 56%. There were three basis approaches, possibly reflecting degrees of industrial experience: to discuss accounts receivable, accounts payable and credit control; to discuss stocks, debtors and creditors; and to discuss the functional areas which could affect NWA, eg procurement, logistics, operations, sales and credit control. The approach used naturally dictated the business functions represented in the project team and the actions taken. The most prevalent blind spot was “operations”, ie the production process and the related engineering dimension.

Question 5

Question content - As a result of concerns about lack of transparency and regulation in parts of the derivatives markets preceding the financial crisis, regulators worldwide are pushing ahead urgently with proposals that OTC derivatives transactions, including corporate vanilla currency and interest rate types, be exchange traded, centrally cleared and where possible novated to a central counterparty. Students were asked to explore the implications of such a change for a typical manufacturer exporting half its output in foreign currency and fixing the interest rate on half of its debt, quantifying the answer where possible.

Ten out of fifteen passed this topical question, with overall marks averaging 54%. The collateral/liquidity impact of unexpected spikes in mark-to-market valuations was picked up by most students, as was the systems burden of daily settlement; fewer mentioned the credit/leverage implications. However, attempts to quantify the impacts were patchy.

Question 6

Question content - High Street retailers are once again embracing the concept of cross-selling financial services to their customers. Students were asked to characterise this move in business strategy terms and identify the risks. Summary pro-forma financial accounts were provided for a supermarket and a retail bank and students were asked to quantify the magnitude of funding required to implement such a strategy and discuss possible sources.

Students found this question difficult, with only six out of fifteen passing and an overall average mark of 47%. Ansoff's Product-Market Matrix (exploit current market with new product/exploit current product in new market) is the obvious candidate for "business model" but less than half of the responses chose that approach. However the discussion of risks was much better. What defeated a majority of students responding to the rest of the question was the quantum of funding required to deliver the target earnings from the banking operation, relative to the existing size of the retailing part of the business; this provides the context for the funding sources part of the question where the quality of answers was mixed.

Question 7

Question content - As a result of the financial crisis the validity of some previously widely accepted risk metrics has been questioned. Students were asked to characterise briefly VAR, portfolio VAR, scenario analysis and Monte Carlo analysis, to identify the major failing, if any, of each during the financial crisis and, looking ahead, identify the implications for corporate treasury risk management.

Another topical question and quite well answered, with ten out of fifteen passing and an average overall mark of 56%. The students here polarised into two groups; two thirds who mostly passed all three parts of the question and one third who failed almost all of the three parts.

Summary Questions 4 to 7

Again, the distribution of marks was bi-polar for these four questions, with ten candidates scoring an overall pass mark averaging 61% (range 51 - 69%) and five candidates scoring an overall fail mark on these four questions averaging 38% (range 27 - 45%).

Apart from significant gaps in understanding on the part of those who failed, the most noticeable general weakness was difficulty with interpreting and manipulating summary data, as provided in Q5 (OTC derivatives) and Q6 (supermarket retailer/banker), in order to quantify answers.

And a feature which has not arisen for several years began to surface again in some responses to these four questions: completely missing out sub-parts of questions.