

The Association of Corporate Treasurers

Examination Paper, Solutions and Examiner's report

Paper: MCT General Exam

OCTOBER 2010

Answer **ALL EIGHT COMPULSORY** questions

QUESTION 1

[Total 15 marks]

You are the assistant treasurer of a leading listed French building materials company, Marbres et Ciments SA (M&C). The company is conservatively financed at 20% debt, 80% equity and its geared beta is 1.05. The interest rate on its debt, much of which is at fixed rates, currently averages 5%.

M&C has won a 17 year concession in West Africa to extract marble for export to Southern European markets. This is a typical project since M&C manages many similar operations globally. As a possible alternative to parent company loans a facility of approximately 3.5 million kobos has been agreed “in principle” with local banks at an interest rate which averages 7.11%. This loan is modelled, for illustration, in the attached cash flow analysis.

The project analysis in the appended table has been prepared by the newly-hired accountant in the West African office and he admits that, although he knows the mechanics of discounted cash flow, he is not confident about the correct way to evaluate the project and has asked for your advice on a number of technical issues. He has calculated the NPVs, for a variety of discount rates, also the IRRs for a number of cash-flow streams, but is not sure if any or none of these approaches is correct or relevant. In particular he is not at all clear on how cash flow should be defined, what type of discount rate to use and the detailed methodology for calculating discount rates.

Required:

- (a) **What is the definition of the “un-geared” or “project” rate of return, when should it be used, how should cash flows and discount rate be defined and what is the actual un-geared IRR for this project?**

(4 marks)

- (b) **What is the definition of the “geared” or “equity” rate of return, when should it be used, how should cash flows and discount rate be defined. What is the actual geared IRR for this project and why is it different from the un-geared IRR?**

(4 marks)

- (c) **Calculate the WACC of the parent company.**

(2 marks)

Project Appraisal - African Granite Project

RAW DATA

| (million kobos) year | 0 2010 | 1 2011 | 2 2012 | 3 2013 | 4 2014 | 5 2015 | 6 2016 | 7 2017 | 8 2018 | 9 2019 | 10 2020 | 11 2021 | 12 2022 | 13 2023 | 14 2024 | 15 2025 | 16 2026 | 17 2027 | Total |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|---------|
| Profit before depreciation | | | | 322 | 1,064 | 1,443 | 1,801 | 1,801 | 1,801 | 1,801 | 1,801 | 1,801 | 1,801 | 1,801 | 1,801 | 1,801 | 1,801 | 1,801 | 24,441 |
| Depreciation | | | | (672) | (672) | (672) | (672) | (672) | (672) | (672) | (232) | (232) | (232) | (248) | (248) | (248) | (251) | (130) | (6,525) |
| Interest | | | (66) | (105) | (281) | (281) | (266) | (234) | (203) | (172) | (141) | (109) | (78) | (47) | (16) | | | | (1,999) |
| Profit before tax | | | (66) | (455) | 111 | 490 | 863 | 895 | 926 | 957 | 1,428 | 1,460 | 1,491 | 1,506 | 1,537 | 1,553 | 1,550 | 1,671 | 15,917 |
| Tax rate | | | | | 7.2% | 9.6% | 12.1% | 14.4% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 37.2% |
| Tax on PBT | | | | | (8) | (47) | (104) | (129) | (370) | (383) | (571) | (584) | (596) | (603) | (615) | (621) | (620) | (668) | (5,920) |
| Profit after tax | | | (66) | (455) | 103 | 443 | 759 | 766 | 556 | 574 | 857 | 876 | 895 | 903 | 922 | 932 | 930 | 1,003 | 9,997 |
| Depreciation | | | | 672 | 672 | 672 | 672 | 672 | 672 | 672 | 232 | 232 | 232 | 248 | 248 | 248 | 251 | 130 | 6,525 |
| Fixed asset investment | | (1,680) | (4,017) | | | | | | | (825) | | | (1,300) | | | | | | (7,822) |
| Working capital | | | (700) | (490) | (245) | (245) | | | | | | | | | | | | 1,680 | 0 |
| Cashflow after interest & tax | | (1,680) | (4,783) | (273) | 530 | 870 | 1,431 | 1,438 | 1,228 | 421 | 1,089 | 1,108 | (173) | 1,151 | 1,170 | 1,180 | 1,181 | 2,813 | 8,700 |
| Loans | | | 3,515 | | | | (391) | (391) | (391) | (391) | (391) | (391) | (390) | (391) | (391) | | | | 0 |
| Cashflow after debt funding | | (1,680) | (1,268) | (273) | 530 | 870 | 1,041 | 1,048 | 838 | 31 | 699 | 718 | (563) | 760 | 779 | 1,180 | 1,181 | 2,813 | 8,701 |
| Cumulative cash flow | | (1,680) | (2,948) | (3,221) | (2,691) | (1,821) | (781) | 267 | 1,105 | 1,135 | 1,834 | 2,551 | 1,988 | 2,748 | 3,527 | 4,707 | 5,888 | 8,701 | |

| | | | | | | | | | | | | | | | | | | | |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|--|--|-------|
| Interest rate % | 3.8% | 3.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.0% | 8.2% | | | | | 7.11% |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|--|--|-------|

DISCOUNTED CASH FLOW

| | IRR | | | | | | | | | | | | | | | | | | |
|--|-------|---------|---------|-------|-----|-------|-------|-------|-------|-----|-------|-------|-------|-------|-------|-------|-------|-------|--|
| Cashflow before tax | 13.9% | (1,680) | (4,783) | (273) | 538 | 917 | 1,535 | 1,567 | 1,598 | 804 | 1,660 | 1,692 | 423 | 1,754 | 1,785 | 1,801 | 1,801 | 3,481 | |
| Cashflow after interest & tax | 10.0% | (1,680) | (4,783) | (273) | 530 | 870 | 1,431 | 1,438 | 1,228 | 421 | 1,089 | 1,108 | (173) | 1,151 | 1,170 | 1,180 | 1,181 | 2,813 | |
| Cashflow before interest, after tax | 12.7% | (1,680) | (4,717) | (168) | 811 | 1,151 | 1,697 | 1,672 | 1,431 | 593 | 1,230 | 1,217 | (95) | 1,198 | 1,186 | 1,180 | 1,181 | 2,813 | |
| Cashflow before tax-sheltered interest | 12.3% | (1,680) | (4,717) | (168) | 791 | 1,124 | 1,665 | 1,638 | 1,350 | 524 | 1,174 | 1,173 | (126) | 1,179 | 1,180 | 1,180 | 1,181 | 2,813 | |
| Cashflow after debt funding | 16.5% | (1,680) | (1,268) | (273) | 530 | 870 | 1,041 | 1,048 | 838 | 31 | 699 | 718 | (563) | 760 | 779 | 1,180 | 1,181 | 2,813 | |

| NPV @ | 0.0% | 5.0% | 7.5% | 10.0% | 12.5% | 15.0% | 20.0% |
|--|--------|-------|-------|-------|-------|---------|---------|
| Cashflow before tax | 14,620 | 6,132 | 3,648 | 1,866 | 577 | (362) | (1,555) |
| Cashflow after interest & tax | 8,700 | 2,893 | 1,207 | 4 | (859) | (1,481) | (2,255) |
| Cashflow before interest, after tax | 10,699 | 4,335 | 2,446 | 1,077 | 77 | (661) | (1,613) |
| Cashflow before tax-sheltered interest | 10,280 | 4,059 | 2,220 | 890 | (79) | (792) | (1,707) |
| Cashflow after debt funding | 8,701 | 3,906 | 2,513 | 1,513 | 786 | 250 | (447) |

The draft loan documentation requires an equity injection of 3,500 million kobos in year 1 and prohibits any dividend payments until the loan has been repaid. After that company policy is that all available cash would be remitted immediately it becomes available.

Required:

- (d) Calculate the NPV for the revised pattern of shareholder cash flows, assuming a 9.5% discount rate. Comment on the result relative to the two previous IRRs.

(4 marks)

- (e) How profitable is this project, based on the IRR and NPV analysis?

(1 mark)

QUESTION 2

[Total 10 marks]

Required:

- (a) Define Variability, Beta and Specific Risk and how they relate to each other.

(3 marks)

The following equity risk metrics are based on 5-year share-price data, from the London Stock Exchange, up to June 2010. They relate to the following sectors, but in no particular order;

Coal mining, food retailing, hotels, internet businesses

| | Variability | Beta | Specific risk |
|----------|-------------|------|---------------|
| Sector A | 68 % | 1.34 | 61 % |
| Sector B | 32 % | 1.39 | 23 % |
| Sector C | 57 % | 0.89 | 55 % |
| Sector D | 23 % | 0.79 | 18 % |

Required:

- (b) Identify which sector is which, giving your reasoning about each sector's risk characteristics and how they affect the different metrics.

(7 marks)

QUESTION 3

[Total 12 marks]

Your company has operating subsidiaries, associates and joint ventures around the world. When establishing new overseas operations the initial shareholding and funding structure is an important consideration, but your company has never formalised its policy on such matters.

Required:

You have been asked to draft a paper covering the following topics:

- (a) A very brief summary of the essential differences between subsidiaries, associates and joint ventures.**

(1 mark)

- (b) A list of the main local considerations relevant to the choice of a funding structure and of funding sources.**

(5 marks)

- (c) A summary of the key advantages and disadvantages of the main generic types of funding for overseas ventures (ie inter-company debt and equity, external debt, third-party equity), relative to the three categories of subsidiaries, associates and joint ventures.**

(6 marks)

QUESTION 4

[Total 13 marks]

Brokers' reports usually cover the standard topics in financial analysis, such as growth, margins, return on capital, coverage ratios, efficiency ratios, investment ratios and capital structure, together with both historical and forecast accounting statements, as essential groundwork. The following table is a typical example of the analysis that is more sharply focused on the shareholder perspective, arranged in four sections; A, B, C and D, with some 5-year historical averages, actuals for 2008 and 2009, and estimates/forecasts for 2010, 2011 and 2012. Each broker has its own detailed terminology and forecasting methodology, but the substance of the analysis across the board is very similar and it is always forward looking. You have to accept the figures as given and focus on the interpretation.

Required:

- (a) Comment on how and why each of the four sections is relevant, maybe highlighting one or two ratios in each section that you consider the most important.**

(6 marks)

- (b) Comment on the main features of the company's performance, as far as the shareholders are concerned. How strong a performance does this analysis reveal?**

(7 marks)

Shareholder Metrics**XYZ plc****Peer Group**

| | 5-yr hist ave. | 2008 | 2009 | 2010E | 2011E | 2012E | 2010E |
|-------------------------------|-----------------|--------|--------|--------|--------|--------|--------------|
| A Forecast price appreciation | | | | -0.50% | | | |
| Forecast dividend yield | | | | 3.90% | | | |
| Forecast stock return | | | | 3.40% | | | |
| Market return assumption | | | | 5.40% | | | |
| Forecast excess return | | | | -2.00% | | | |
| B EPS (p) | | 116.60 | 136.45 | 161.42 | 176.08 | 187.35 | |
| Net DPS (p) | | 59.51 | 63.10 | 72.00 | 81.05 | 90.17 | |
| Net dividend yield | 3.8% | 3.3% | 3.1% | 3.9% | 4.3% | 4.8% | |
| Dividend cover | 2.0 | 2.0 | 2.2 | 2.2 | 2.2 | 2.1 | |
| Dividend payout ratio | 49.6% | 51.0% | 46.2% | 45.2% | 46.0% | 48.1% | |
| C EV / EBITDA | 10.7 | 12.3 | 11.1 | 10.1 | 9.4 | 9.0 | 9.75 |
| EV / Sales | 4.7 | 5.9 | 4.5 | 4.0 | 3.8 | 3.7 | |
| EV / Op FCF | 11.3 | 13.0 | 11.9 | 10.8 | 10.0 | 9.6 | 13.7 |
| Op FCF / EV (yield) | 8.8% | 7.7% | 8.4% | 9.3% | 10.0% | 10.4% | 7.28% |
| EV / Invested capital | 3.40 | 3.7 | 2.2 | 1.7 | 1.6 | 1.6 | |
| P/E | 13.1 | 15.7 | 14.8 | 11.6 | 10.6 | 10.0 | 13.73 |
| Price / Book value | 37.4 | 12.8 | 3.2 | 2.9 | 2.4 | 2.2 | |
| Net ROE | >500% | 108% | 31.0% | 25.4% | 24.7% | 22.9% | |
| D Growth - Sales | 0.6% | 3.7% | 79.2 | 32.40% | 2.30% | 2.30% | |
| Growth - EBITDA | 6.5% | 7.4% | 50.9% | 30.4% | 5.0% | 4.5% | |
| Growth - EPS | 11.0% | 12.0% | 17.0% | 18.3% | 9.1% | 6.4% | 8.83% |
| Growth - Cash EPS | 10.3% | 9.9% | 18.8% | 15.7% | 8.5% | 6.3% | |
| Growth - Net DPS | 13.4% | 12.1% | 6.0% | 15.7% | 11.0% | 11.3% | 9.50% |
| Growth - Book value PS | 88.6% | 98.7% | na | 2.9% | 22.2% | 8.4% | |

QUESTION 5**[Total 15 marks]**

You are treasurer of Fabrique Ltd. (FL), a manufacturer of valves for pipework. If rated, FL would probably be BB flat. A simplified Balance Sheet and Income Statement are shown below:

Balance Sheet.**Assets**

| | |
|---------------------|------------|
| -fixed assets | 60 |
| -net working assets | 30 |
| -other | <u>10</u> |
| Total | <u>100</u> |

Liabilities

| | |
|---------|------------|
| -equity | 45 |
| -debt | 45 |
| -other | <u>10</u> |
| Total | <u>100</u> |

Income Statement

| | |
|------------------|----------|
| -revenue | 200 |
| -pbit | 12 |
| -pbt | <u>9</u> |
| Profit after tax | <u>6</u> |

FL is based in the UK where most of its raw materials are resourced. Three quarters of sales are export, mainly in euros, and are typically on a rolling 12 month call-off basis. Debt is a £50mn floating rate bullet repayment 5year secured bank facility. Fuel cost is 10% of total revenue.

Due to the recent extreme volatility in financial markets the board on your advice has decided to significantly lengthen currency and fuel hedging maturities and set the mix of fixed and floating debt at 50/50.

Currency transaction risk will be hedged on a 12 month rolling basis and on a straight line sliding scale with 100% hedged one month ahead and zero hedged beyond 12 months.

Fuel will be hedged eighteen months ahead, again on a straight line sliding scale with 100% hedged one month ahead and zero hedged beyond 18 months.

Your bank has now raised with you the possibility of collateral calls to cover their mark-to-market exposure on their now larger potential derivatives exposure to you. They have proposed these alternatives:

1. you provide cash collateral by drawing down your debt facility and paying the normal borrowing rate;
2. you pay a non-refundable premium of 50 bp per year on the nominal value of the derivatives transacted.

Required:

- (a) Calculate how much the premium on the nominal value of derivatives outstanding would cost per year. (3 marks)
- (b) Estimate how much collateral you might have to post if mark-to-market amounts were to go against you simultaneously on interest, currency and fuel hedges. List your assumptions. (6 marks)
- (c) What factors would influence your choice of alternative? (4 marks)
- (d) What further information might you require to help you make your choice? (2 marks)

QUESTION 6

[Total 11 marks]

The reduced availability, lower maturity and higher cost of bank debt is driving more borrowers to access bond markets, including some which might previously have felt excluded by lack of scale, of expertise or of a credit rating.

Required:

- (a) For a company contemplating a bond issue for the first time what are the drawbacks compared with bank debt?

(5 marks)

- (b) What process/actions will the company need to pursue/implement to achieve a rating?

(6 marks)

QUESTION 7

[Total 10 marks]

In 1981 the Government initiated a market in RPI-linked bonds and is obliged to issue a minimum amount each year to maintain liquidity in the market.

The Government issues are typically long term, eg 30 years, and can be “coupon” or “zero coupon”. The bond cash flows are calculated thus:

- Principal of 100 at start is indexed by annual RPI year on year and the grossed up sum is repaid as a bullet at maturity
- The annual coupon at issuance is the “real interest rate” associated with the *at issuance date* reference RPI-linked Gilt (say 2.5%). Each year this reference “real rate” of (say) 2.5% is indexed by the *current* RPI, with a 3 month or a 8 month lag, and either paid out [coupon RPI-linked bond] or rolled up to maturity [zero coupon RPI-linked bond]. Coupons can also be semi-annual.

You are a funding adviser in a firm of corporate treasury consultants. Your managing partner is concerned about the current scarcity of bank debt, particularly longer maturities. She asks you to explore the possibilities for corporate issuance of RPI linked bonds.

Required:

- (a) Assuming non-government issuers, what are the major positives and negatives for issuers and for investors?

(5 marks)

- (b) For what types of issuer and investor would this instrument be attractive?

(5 marks)

QUESTION 8**[Total 14 marks]**

Some large, mature, politically stable and prosperous economies, hitherto rated AAA stable, are now seen as potentially subject to sovereign rating downgrade in the aftermath of the financial crisis and of the actions taken to soften its impact.

Required:

- (a) If France was to be downgraded one notch from AAA to AA+ what would be the direct economic consequences?
(5 marks)
- (b) What would be the likely financial/treasury impact on:
- (i) A large firm trading mainly in France but importing a significant proportion of raw material inputs from either the Euro Zone (50%) or from elsewhere around the world (50%)?
(2 marks)
 - (ii) A large firm operating and resourcing mainly in France but exporting worldwide a significant proportion of output?
(2 marks)
 - (iii) A large global manufacturing firm resourcing and selling close to its manufacturing operations, with 20% of operations in France and the balance spread equally across the Euro Zone, North America, Australasia and BRIC (Brazil, Russia, India, China)?
(2 marks)
- (c) If France is put on negative outlook, which may signify a minimum 30% probability of a downgrade to AA+ over the next two years, what precautionary actions might you take if you were group treasurer of the firm in (b)(i)?
(3 marks)

(c) Calculate the WACC of the parent company.

3.6 mins (2 marks)

Company WACC;

$$K_e = 4.5\% (\text{say}) + (1.05 \times 4.5\%) = 9.23\%$$

$$K_d = 5\% \times (\text{say}) 0.7 = 3.5\%$$

$$WACC = (9.23\% \times 0.8) + (3.5\% \times 0.2) = 8.08\%$$

(d) Calculate the NPV for the revised pattern of shareholder cash flows, assuming a 9.5% discount rate. Comment on the result relative to the two previous IRRs.

7.2 mins (4 marks)

Shareholder cash flows are as follows;

| | Cashflow | | 9.5% disc factors | dcf |
|---------|----------|-----------------------------------|-------------------|----------|
| Year 1 | (3,500) | | 0.9132 | (3,1960) |
| Year 14 | 7,027 | Op. cash balance of 3,527 + 3,500 | 0.2807 | 1,972 |
| Year 15 | 1,180 | year's cash flow | 0.2563 | 302 |
| Year 16 | 1,181 | year's cash flow | 0.2341 | 276 |
| Year 17 | 2,813 | year's cash flow | 0.2138 | 601 |

NPV (9.5%) = negative 44, therefore IRR just less than 9.5%.

Lower than un-g geared IRR and much lower than Geared IRR, because the severe dividend policy covenant means cash flows seriously deferred.

(e) How good is this project, based on the IRR and NPV analysis?

1.8 mins (1 mark)

Very good – project IRR of 12.3% versus WACC of 8.08%.

Equity IRR of 16.5% versus an (un-levered) cost of equity of 9.23%.

But much more marginal when dividends are constrained (IRR just under 9.5% as against (un-levered) equity cost of 9.23%.

QUESTION 2 Definition of Equity Risk Metrics and Practical Sector Examples

18 mins (11 marks)

The following equity risk metrics are based on 5-year share-price data, from the London Stock Exchange, up to June 2010. They relate to the following sectors;

Coal mining, food retailing, hotels, internet businesses

| | Variability | Beta | Specific risk |
|----------|-------------|------|---------------|
| Sector A | 68 % | 1.34 | 61 % |
| Sector B | 32 % | 1.39 | 23 % |
| Sector C | 57 % | 0.89 | 55 % |
| Sector D | 23 % | 0.79 | 18 % |

Required:

(a) Define Variability, Beta and Specific Risk and how they relate to each other.
5.4 mins (3 marks)

Variability – standard deviation around the mean of period returns on the particular share – a measure of overall volatility and risk.

Beta – relative volatility of returns on the share versus returns on the total stock market, measured by the share/market co-variance divided by market variance – a measure of non-diversifiable or systematic risk, being fundamentally market related. Also described as the slope of the regression line relating share to market returns.

Specific Risk – standard deviation of returns on the share around the regression line i.e. after the market-related variation has been removed – a measure of diversifiable or non-systematic risk.

(b) Identify which sector is which, giving your reasoning about each sector's risk characteristics.

12.6 mins (7 marks)

High beta sectors – hotels, coal mining

High specific risk sectors – internet, coal mining

High beta and high specific risk – coal mining

Markets are power generation and industry generally, with competitive sources of supply. Also capital intensive.

Physical extraction industry with associated physical, financial and economic hazards.

A High beta, low specific risk – hotels

To an extent discretionary spending for both business and private customers, including tourism.

Non-tech, labour-intensive, low wage industry.

A. Low beta, high specific risk – internet

Internet not particularly sensitive to economy – depth of business and personal use.

Still a lot of small firms, technologically based, still developing, company start-ups and failures.

B. Low beta, low specific risk – food retail

Basic industry – we all have to eat, and stores can and do flex their product range and prices in difficult times.

Straight-forward industry, not high-tech, not subject to regulatory discrimination, only constraints on the power of big supermarkets.

QUESTION 3 Funding of Subsidiaries, Associates and Joint Ventures

Your company has operating subsidiaries, associates and joint ventures around the world. When establishing new overseas companies as the vehicle for new business the initial funding structure is an important consideration, but your company has never formalised its policy on such matters.

Total 21.6 mins (12 marks)

Required:

(a) A very brief summary of the essential differences between subsidiaries, associates and joint ventures.

1.8 mins (1 mark)

You have been asked to draft a paper covering the following topics;

| | |
|---------------|---|
| Subsidiary | “controlled” by the parent, indicative shareholding greater than 50% and, of course, can be up to 100% |
| Associate | “significant influence” but not control, indicative shareholding greater than 20% and up to 50% |
| Joint Venture | could technically be a subsidiary or an associate but the terms usually implies the involvement of 2, 3 or more interested parties, often to a new “project venture”, each with something particular to contribute. |

(b) A list of the main local considerations relevant to the choice of a funding structure and of funding sources.

9 mins (5 marks)

Use of parent company bank and capital market sources to ensure best liquidity and access at all times.

Local tax rates and DTTs, for after-tax costs of debt.

Tax status of overseas entity, utilisable start-up or existing tax losses.

Differential local incentives or penalties.

Ability and cost of dividend remittances, including company vehicles for efficient remittance.

Sophistication and development of local debt and equity markets.

Level of risk to overseas venture, especially political risk

Solvency and credit status of any counter-parties and partners.

Medium to long-range projections for overseas venture, especially projected earnings, dividends, cash flows, investment requirements.

Group-wide dividend policy.

Group policies on e.g. asset finance, leasing, receivables financing

This list is not exhaustive

(c) A summary of the key advantages and disadvantages of the main generic types of funding for overseas ventures (ie inter-company debt and equity, external debt, third-party equity), relative to the three categories of subsidiaries, associates and joint ventures.

10.8 mins (6 marks)

Inter-company debt and equity, which are inter-changeable to suit the situation.

Parent company finance is usually the cheapest and most easily controlled form the centre, and detailed terms and conditions can be decided by head office, subject to tax and other laws. At risk if venture likely to fail.

Debt attractive because of tax shelter, but limited by thin-cap rules.

External, bank or capital market debt, including leasing etc.

May be on favourable terms because of local issues.

May be desirable to reduce financing risk of parent or build local bank or capital market relationships.

May be seen as mitigating commercial risk of new venture.

Tax-sheltered cost, especially if high tax rate. With-holding tax may favour local debt versus parent debt or equity.

Third party equity.

May be attractive if gearing a problem.

Use of local equity markets attractive for risk mitigation as for local debt. Also local participation may be desirable or required by law or custom and practice.

Development finance with preferential terms.

Maximise use unless onerous strings attached.

Government grants.

Maximise use unless onerous strings attached

Subsidiaries - control of strategic and financial policies, including dividends means much freer, less constrained, choice among the various sources of funding eg debt vs equity, internal vs external funding, so easier to plan least-cost (after tax), flexible, funding over the total planning horizon.

Associates - only “significant influence” over policies so another party may or may not have “control”. Probably a general preference for limiting one’s investment to the equity stake, for use of external debt finance and unlevered structures, but depends on circumstances.

Joint Ventures - essentially “club-type” deals between a number of partners, tightly structured legally. Equity and debt contributions usually all pro-rata so often determined by weakest partner. Often highly leveraged on external debt with minimum partners’ equity/subordinated debt.

QUESTION 4 Understanding Brokers' Reports

Brokers' reports usually cover the standard topics in financial analysis, such as growth, margins, return on capital, coverage ratios, efficiency ratios, investment ratios and capital structure, together with both historical and forecast accounting statements, as essential groundwork. The following table is a typical example of the analysis that is more sharply focused on the shareholder perspective, arranged in four sections; A, B, C and D.

Total 23.4 mins (13 marks)

Required:

(a) Comment on how and why each of the four sections is relevant, maybe highlighting one or two ratios in each section that you consider the most important.

10.8 mins (6 marks)

Section A – key focus because of immediate implications for shareholder, prospects for shareholder cash and non-cash return versus the market expectation.

Forecast dividend yield is my favourite – ready cash, whereas lost share-price appreciation can be recovered (or not as the case may be!). Also signalling effect of dividends – management confidence about future.

Section B – again, statistics very immediate for shareholder i.e. dividends and earnings, with emphasis on the actual yield v. share price and on the margin of safety via dividend cover. Also forecast versus historical to put a good or a bad year in perspective, hence 5-year average, also to identify trends.

My favourites are dividend yield, for comparisons with other investments, and dividend cover as a measure of safety of the dividend policy, both to be related to the maturity, stability and growth prospects of the sector and the company

Section C – valuation multiples of all kinds (including both immediate equity and more fundamental entity multiples) for robustness. To check whether share price looks out of line with key drivers (sales, EBITDA, EPS etc). Five-year averages and peer group figures also for comparison, for the same reason, also to help see through temporary good or bad figures. EV/Invested capital and Net ROE link back from shareholder value into the fundamentals of financial performance.

My favourites – selective use of the EV multiples depending on which works best in the sector and also on the company's situation (EBITDA is not a good comparator if it is negative or very low). Annual Op FCF not very useful – too volatile year-on-year. And the good old P/E ratio – easy to use and valid where capital structure and tax situation are stable, less so when they are not.

Section D – growth is the fundamental driver of shareholder value. Even if profits, dividends and cash flow are weak, the shares will be priced accordingly, so the crucial up-side potential comes from expected future growth. Above all I like growth in EBITDA and EPS, as indicators of the fundamental drivers (sales growth in itself is

no good without profit) and we do need to be aware of any big non-cash distortions, but amortisation was the big issue behind cash eps. Growth in DPS is also extremely valid for the simplest way of checking share price fundamental valuation.

(b) Comment on the main features of the company's performance, as far as the shareholders are concerned. How strong a performance does this analysis reveal?

12.6 mins (7 marks)

Section D - Good strong growth in sales and EBITDA indicating acquisitions in 2009 and expected in 2010, then reverting to previous very low growth.

Growth in EPS and cash EPS much steadier growth but tailing away - by 2012 - shares almost certainly issued in conjunction with acquisition. Well above peer group. Dividends per share even more steady, good, growth - not surprising as more within managements' control. Once again well above peer group.

Book value per share - growth erratic, not much use.

Section B - EPS and Net DPS already covered in growth ratios. Net dividend yield of 3.8% historically and 3.9% to 4.8% prospective is higher than the market average. The recent 3.3% and 3.1% reflects the relatively high share price valuation post merger but before the full benefits have come through (NPV of future benefits in current share price).

Dividend cover reflects a stable policy and also stable (but growing) eps/earnings. Cover of 2.0/2.2 or payout of around 50%, indicates a "yield stock" in a stable, mature industry.

Section C - EBITDA and P/E multiples are about 10%. Peer group averages. Both indicate strong reservations. Note that prospective multiples (2010, 2011, 2012), fall for technical reasons, as per normal because current values are compared with (normally) steadily increasing sales EBITDA, Eps, Op FCF etc.

The main issue on the technical multiples is the boost to values with the recent acquisition, otherwise a lot of stability.

The EV/Op Free Cash Flow multiple of 11.9 or yield of 8.4 implies low or negative real growth "in perpetuity". (WACC less inflation for mature, stable industry? 6.5% - 2.0%?) - indicates decline of up to 8.4% - 4.5% = 3.9%). Note that the peer group values are not quite so averse. Price/Book Value - figures to 2008 look crazy. 2009 onwards 3.2 is high, indicating good value (profits and cash flow) out of written down assets.

Net ROE again indicates written down assets, 31% being very high (These last two ratios not very reliable accounting measures).

Overall the valuations seem to be supported by strong cash flows despite only steady growth, cash flow performance probably being stronger than profits performance.

Section A - Against a forecast market return of 5.40% (based on dividend yield of 2%? And growth of 3.4%) the company's shares are expected to give a return of only 3.4%, because of a drop in price of 0.5% (merger value not being fully realised?)

Total 23.4 mins (13 marks)

QUESTION 5 Collateral Calls on Derivative Mark-to-Market Positions

Total 27 mins (15 marks)

Required:

(a) Calculate how much the premium on the nominal value of derivatives outstanding would cost per year.

5.4 mins (3marks)

| <u>Nominal</u> | <u>Premium @ 50 bp</u> | |
|----------------|--|-------------------------------------|
| IRS | $45/2 = 22.5$ | 0.113 |
| FX | $(200 \times 0.75 \times 1 \text{ yr})/2 = 75 *$ | 0.375 [12 m sliding scale hedge] |
| Fuel | $(20 \times 1.5 \text{ yr})/2 = 15 *$ | 0.075 [18m sliding scale hedge] |
| Premium Costs | | <u>0.563</u> |

* Note: sliding scale nominal calculations are approximate.

(b) Estimate how much collateral you might have to post if mark-to-market amounts were to go against you simultaneously on interest, currency and fuel hedges. List your assumptions.

[10.8 mins] (6 marks)

Can we vary customer prices to pass on some/all of risk?

What do competitors do?

QUESTION 6 Bonds versus Bank Debt & Acquiring a Credit Rating
Total 19.8 mins (11 marks)

(a) For a company contemplating a bond issue for the first time, what are the drawbacks compared with bank debt?

9 mins (5 marks)

Almost certainly require a credit rating, particularly if non-domestic issue or unknown name.

Consequent cost, effort and time of acquiring the rating and maintaining it.

Increased scrutiny by the CRA, consequent visibility of bad news [however this can be a positive consequence from a governance viewpoint because of the discipline imposed on the executive].

Possible need to swap out undesirable features included to make the issue sell (at the simplest a currency swap if a non-domestic issue when the funds are required for domestic use).

Bullet drawdown and repayment which may not suit the company's cash flow profile (inflexibility) [so newly arrived capital market players may use their first bond issue to refinance core bank debt].

Difficulty of pre-payment (inflexibility).

Difficulty of re-negotiating terms (inflexibility).

. . . . and remember "a rating is not just for Christmas!"

(b) What process/actions will the company need to pursue/implement to achieve a rating?

10.8 mins (6 marks)

Decide on target rating level: initial reality check of current margin over LIBOR quoted by existing banker(s) against margin over swap for current comparable bond issues with target rating.

Seek advice from investment bank about how a rater would view the business . . . and the gap, if any, against in-house expectations. As for borrowing, business risk and sustainable cash flow to service and repay debt are key considerations.

OR if confident enough seek (and pay for) a confidential rating from a CRA (sometimes difficult to keep confidential!)

In either event expect to have to provide for scrutiny by the CRA:

5 year financials
company's presentations to equity analysts
equity analysts reports
existing loan documents
detailed business plan

Expect CRA to ask about:

where the management is taking the business in the next 3-5 years
the level of risk with which the management is comfortable
evidence of the management teams execution capability
special event risk (if any) to which company is exposed

QUESTION 7 RPI-Linked Bonds: Pros & Cons for Non-Government Issuers and for Investors
18 mins (10 marks)

Background

New capital adequacy and liquidity regulations for banks have made bank debt scarcer, more expensive and shorter in tenor. Some institutional investors on the other hand, are now keen to better match assets with their longer term liabilities.

Key feature of instrument is indexation of principal (and possibly roll-up of coupon), resulting in huge payout at maturity for issuer and huge counterparty risk for investor.

Required:

(a) Assuming non-government issuers, what are the major positives and negatives for issuers and investors?

9 mins (5 marks)

| | <u>Positives</u> | <u>Negatives</u> |
|------------|--|--|
| Issuers: | long tenor possible liquidity: low/zero coupon bullet repayment repayment back loaded | refinance/repayment risk mark-to-market movements flexibility: prepayment cost of coupon for long tenor |
| Investors: | long tenor real return tax deferral on accrued income RPI hedge | credit risk, especially with zero coupon instrument liquidity re low/zero coupon mark-to-market |

(b) For what types of issuer and investor would this instrument be attractive?

9 Mins (5 marks)

- Issuers:**
- investment grade because of long term credit risk and back loaded repayment
 - low business risk because of credit & liquidity risks
 - income related to RPI
 - long term appreciating assets eg property
 - so, hotels, (some types of) property investment companies, housing associations, utilities, capital intensive low business risk corporates at medium tenors (10-20 yrs)
- Investors:**
- primarily pension funds because of ALM considerations
 - individuals managing own pension funds, eg zero coupon to retirement (tax deferral) and coupon thereafter (capital preservation)
 - portfolio component of other types of fund for diversification
 - commercial bank liquidity reserves, providing instrument does not attract significant regulatory haircut.

QUESTION 8 Treasury Implications of a Sovereign Downgrade

25.2 mins (14 marks)

Required:

(a) If France was to be downgraded one notch from AAA to AA+ what would be the direct economic consequences?

(5 marks)

Economic impact of French sovereign rating downgrade:

International appetite for French Government debt would decline and yields would need to increase.

Further fiscal tightening ie a mix of public spending cuts, increased taxes or both would be necessary.

Weakening of Euro.

France is a key EU member with Germany, depending on global financial market reaction support required from ECB or in its absence from IMF, infecting the wider Euro Zone and possibly threatening survival of Euro.

Sovereign cap on corporate ratings.

(b) What would be the likely financial/treasury impact on:

Depends to some extent on whether the downgrade is specific to France or part of a worldwide slide.

(i) A large firm trading mainly in France but importing a significant proportion of raw material inputs from either the Euro Zone (50%) or from elsewhere around the world (50%)?

3.6 mins (2 marks)

Reduced sales, increased raw material costs, likely pressure on bank covenants, disposals, tactical/strategic shift in business model. If the Euro is wholly or partly abandoned, then impact on raw material costs may be mitigated if prices from weaker Euro Zone countries decline.

(ii) A large firm operating and resourcing mainly in France but exporting worldwide a significant proportion of output?

3.6 mins (2 marks)

Increased exports, reduced raw material/labour costs, acquisition opportunities but beneficial impact mitigated if downgrade infects rest of Euro Zone.

(iii) A large global manufacturing firm resourcing and selling close to its manufacturing operations, with 20% of operations in France and the balance spread equally across the Euro Zone, North America, Australasia and BRIC (Brazil, Russia, India, China)?

3.6 mins (2 marks)

If downgrade impact limited to France, portfolio benefits likely to hold up performance. If Euro Zone affected, ability of firm to fund itself may be prejudiced despite 60% of revenues elsewhere.

(c) If France is put on negative outlook, which may signify a minimum 30% probability of a downgrade to AA+ over the next two years, what precautionary actions might you take if you were group treasurer of the firm in 8.b.1?

5.4 mins (3 marks)

As group treasurer of the firm in 8.b.1 you would require a contingency plan for (i) a depreciation of the Euro affecting 50% of imports and (ii) a partial or full abandonment of the Euro. Parties to the plan would be Procurement and Sales. Treasury deliverable would be fx hedging policies for a restructured and more flexible procurement policy to take account of greater uncertainty about volume and restructuring of the supply chain to take advantage of lowest cost sources.

Examiner's Report

OVERVIEW

It is worthwhile to note the parts of questions which carry high marks and to plan your time to respond proportionately. Questions with several parts are often so structured in order to lead candidates through the analysis and evaluation necessary to make a prescription about some important issue. Not surprisingly, the prescriptive part which is the more difficult carries the higher marks eg Case Exam Questions 3, 4, 5, & 7, General Exam Question 4.

In professional practice corporate treasurers often need to scope a problem at short notice, make assumptions about missing data which there is not time to research, make approximations to quantify the problem and propose a solution. Some questions in both exams may be designed to assess this skill eg General Exam Q5, Case Exam Q6. These questions sometimes seem to wrong foot candidates.

In the questions devoted to corporate finance and funding it is essential that candidates thoroughly understand the key concepts and can apply them appropriately to practical problems including correct numerical calculations.

General Examination

Question 1 Definition and Use of Ungeared, Geared and Shareholder Methods for Project Evaluation (15 marks)

Average mark 43.7%, pass rate 31%.

This topic is covered by TM2, as I understand, and there was plenty of evidence of “rote learning”, but the poor results reflect weak understanding of the fundamental concepts and the analytical methodology. Only the strongest third of candidates wrote pass answers.

Worst failing; inability to define and calculate shareholders' IRR on the project despite explaining the importance of free access to project cash flows earlier on in the question.

Question 2 Definition of Equity Risk Metrics and Practical Sector Examples

(11 marks)

Average mark 56.4%, pass rate 88%.

This was an easy question which any capable candidate should pass (two failed). It was therefore marked fairly demandingly.

Worst failing; getting the diversifiable and non-diversifiable risk metrics the wrong way round and the inability to apply differentiate between the two when discussing various sector risks eg fluctuating hotel demand identified as specific or diversifiable risk, or the technological dimension of internet businesses as systematic or non-diversifiable risk.

Question 3 Funding of Subsidiaries, Associates and Joint Ventures (12 marks)

Average mark 58.4%, pass rate 63%.

The third para of this question required ability or experience to be able to write a good answer about relating types of funding from different sources, and to the local conditions discussed (quite well) in the second part of the question. So, a very good discriminator: the better candidates scored very well. The weaker ones scored badly.

Worst failing; assuming (surprisingly) that all subsidiaries are wholly owned, plus weak understanding of the practicalities of funding legal entities other than the total group.

Question 4 Understanding Brokers' Reports

(13 marks)

Average mark 53.5%, pass rate 75%.

This question revealed a big difference between the ability review conceptually, typical shareholder metrics used in brokers' reports (pass rate 81%) and the ability to interpret an actual numerical example (pass rate 38%).

Worst failing; failure to realise that annual sales growth of 37%, 79.2%, 32.4%, 2.3%, 2.3% and a similar EBITDA track probably indicates an acquisition, and therefore to miss the implications for other metrics eg valuations.

Question 5 Collateral Calls on Derivative Mark-to-Market Positions (15 marks)

Average mark 46.6%, pass rate 44%.

The scenario for this question is the need to quantify roughly the collateral call implications of an increase in the level of hedging for interest, fx and fuel price risk exposure, given summary information about the company's financials, the exposures and the hedging policies. Responses to this question revealed surprising weaknesses in executing basic arithmetic calculations and in making realistic assumptions about volatilities. A quarter of candidates failed this question because they omitted to answer any or a significant number of question parts.

Worst failing: 5(a) - estimating nominal value of derivative hedges; 5(b) - making assumptions about volatilities; 5(c) - picking up on issues like the impact of large collateral calls on the facility headroom for a sub-investment grade borrower; 5(d) - volatility correlations, business plan assumed facility headroom.

Question 6 Bonds versus Bank Debt & Acquiring a Credit Rating (11 marks)

Average mark 54.9%, pass rate 56%.

A topical question about lenders' lack of enthusiasm driving borrowers to access the bond market and consequently require a credit rating: based on core syllabus material and not requiring any leaps of the imagination so a good discriminator of the well and the less well prepared.

Worst failings: 6(a) - bond versus bank debt - missing out on the 100% drawdown/bullet repayment preference of bond investors; 6(b) - rating process, actions - realising the need to understand the CRA's criteria and the company's ability to meet them.

Question 7 RPI-Linked Bonds: Pros & Cons for Non-Government Issuers and for Investors (10 marks)

Average mark 43.6%, pass rate 31%.

A question about the potential for non-government entities, eg corporates, to issue RPI-linked bonds: both parts of the question required some deductive thinking on the

part of candidates in order to identify the pros and cons for investors and issuers as well as the types of issuer for which such an instrument might be appropriate. A third of candidates passed on both parts of the question and two-thirds on neither part.

Worst failings: failure to understand the low coupon and principal-indexed nature of the instrument, implying for instance the additional credit risk assumed by the investor and the consequent need for the issuer to be investment grade.

Question 8 Treasury Implications of a Sovereign Downgrade (14 marks)

Average mark 58.5%, pass rate 63%.

Another topical question, this time about the treasury implications of a sovereign downgrade and among the uniformly better answered by candidates. The direct economic impact on the economy was noticeably well answered by the great majority. The other two parts about the treasury impact on specific types of company and about the precautionary actions which a treasurer might take if a country is put on negative watch were better discriminators, but the quality of answers overall was generally very good.

Worst failings: the weaker answers to 8(b) and 8(c) were usually due to lack of demonstrated imagination eg in the case of 8c not realising that a company heavily dependent on imported raw materials would need to review its supply chain in conjunction with the procurement and sales functions.