

# Examination Paper, Solutions and Examiner's report

Paper: MCT Exam

**OCTOBER 2009**

## MCT General Exam paper

You are required to answer ALL 7 questions.

### QUESTION 1

[Total 11 marks]

A leading German supplier of safety equipment and automatic door sensors, Turag, recently increased its dividend for the thirteenth successive year in spite of the fall in underlying sales and profits during the second half of the year to March 2009. The company intends to continue expanding through acquisition opportunities using its strong balance sheet.

The market revised its profit forecasts for the company slightly downwards bearing in mind both its exposure to the construction market and the company's announced programme of cost cutting.

The total payment was 7.93 cents per share (7.55 cents) from earnings of 14.89 cents (13.49 cents). The prospective P/E ratio is just under 12 times, slightly ahead of mid-cap engineering peers. The shares currently yield 4.5% and firmed 1.5 cents on the news to close at 176.5 cents.

#### Key Figures

##### Income Statement

	March 2008	March 2007
Profit before tax (Euro m)	68.0	62.2
Profit attributable to shareholders (Euro m)	50.284	44.011
Earnings per ordinary share (cents)	13.49	11.86
Dividends paid and proposed (Euro m)	28.172	26.753
Paid and proposed per share (cents)	7.55	7.18

##### Balance Sheet

Borrowings (Euro m)	72.4	29.8
Capital and capital reserves (Euro m)	63.5	50.4
Retained earnings (Euro m)	175.6	156.2

##### Cash Flow

(Euro m)	March 2008	March 2007
Profit before tax	68.0	62.2
Depreciation	11.1	9.6
Amortisation and other non-cash items	1.8	2.6
Change in working capital	(4.9)	(4.1)
Taxation paid	(17.6)	(19.5)
Cash from operations after tax	58.4	50.8
Net interest	(1.8)	(0.9)
Net capital expenditure	(18.7)	(11.2)
Acquisitions	(44.1)	(27.5)
Dividends paid	(27.3)	(25.9)
Increase in debt	38.0	3.6
Increase/(decrease) in cash	4.5	(11.1)

**Required:**

Using the above commentary and data on Turag to illustrate your answer and quantify it, as appropriate, review the considerations relevant to deciding a company's dividend policy.

**QUESTION 2**

**[Total 10 marks]**

As at June 2009 the 10-year US treasury note yield is currently 3.75%. The S&P 500 stands at 922. The trailing (historical) P/E ratio for the S&P 500 is 14.5 times, around its long-term average and the average dividend yield is 3%.

One equity analyst has commented that the equity market would be fairly valued if the average bond yield reached 4.6%.

**Required:**

- (a) Explain, with a numerical example based on an average share price of 100 cents, the equity valuation logic that connects the P/E ratio to bond yields eg a P/E of 14.5 and a treasury note yield of 3.75%? Your focus should be on dcf valuation for the individual shareholder based on the dividend growth model using an appropriate discount rate. Make whatever assumptions are required and justify any assumptions that you do make.

(4 marks)
- (b) What would a P/E ratio of 20 imply about growth expectations if all else remains the same? You will need to calculate earnings per share.

(2 marks)
- (c) How much is the market over or under-valued if the average bond yield at 4.6% would result in stocks being "fairly valued"? Assume the average bond yield carries a 50 basis points premium above the Treasury yield.

(4 marks)

### QUESTION 3

[Total 19 marks]

In 2007 Adonis, a US company funded from private equity and hedge funds, acquired New England's leading firm of estate agents, Homeland Inc. after an intense take-over battle. The acquisition price was USD 2120, a 31% premium on the market capitalisation one year earlier. Homeland had been virtually debt-free for several years.

EBITDA in 2006 was USD 155.4 million but had fluctuated between USD 92 million (2005) and USD 156 million (2003, 2006). Earnings for shareholders were USD 130.34 in 2006.

The 2007 acquisition was funded, in ascending order of seniority, by equity of USD 640 million, USD 330 million of unsecured bonds with the option for "payment-in-kind" via rolled-up interest, USD 950 million of "covenant-light" secured bonds plus a USD 400 million bank revolving credit facility. USD 200 million of the revolver remained undrawn but available for meeting interest payments in case of any cash flow shortages. The average interest rate on the combined debt was 6.76%.

At mid-2008 the Chairman reported that the US housing market was "shot to pieces" and that the company was expecting an EBITDA loss of USD 94 million, compared with the previous year's positive EBITDA of USD 170 million. A programme of drastic closures, redundancies and cost cutting has been implemented and analysts think that EBITDA of at least USD 80 million is still achievable when the housing market recovers. Interest payments on all bonds have been suspended and over the last six months the secured bonds have been trading as low as 50% of par value. Maybe half of the bonds have been bought by "distressed debt funds".

In early 2009 a "debt-for-equity swap" re-structuring plan was announced under which a new private equity/hedge fund consortium, including Adonis, will inject USD 150 million into the company in exchange for a 60% equity stake. The company already holds cash balances of USD 120 millions from the revolver.

Secured bondholders will write off their claims in exchange for a 35% equity stake plus USD 350 million of new bonds, which pay interest at 10% but with flexibility regarding timing of interest payments.

Unsecured bondholders, who are also owed an extra USD 10 millions under the PIK arrangement, will exchange their securities for 5% of the equity.

The outstanding USD 200 million under the revolver will be repaid in full.

#### **Required:**

- (a) **Summarise and comment on the suitability of the capital structure of i) the buy-out in 2007 and ii) after the proposed re-financing in 2009, supporting your answer with appropriate numerical financial metrics.**

**(9 marks)**

- (b) **Summarise the changes in the values of the investments of the various debt and equity stakeholders from the 2007 acquisition to the position after the re-structuring. Quantify the percentage impact on the relative "winners" and "losers".**

**(10 marks)**

**QUESTION 4****[Total 22 marks]**

England Expects plc (“EE”) is an independent publicly quoted supplier of railway signalling equipment throughout the world. The British Government has recently committed a significant sum of money to upgrade the little-known Birmingham Underground Railway System (“BURS”) and EE, which is technically well qualified, is in the running for the signalling contract. The value of the contract is £400 million, spread evenly over the 10 year contract life. EE estimates the internal rate of return on the project, on the basis of its tender submission, to be 13%, compared to its weighted average cost of capital (“WACC”) for such projects of around 9% (based on a cost of equity of 12% post tax and a post tax cost of debt of 5%). Highly summarised data on EE is provided in the table below.

Year to 31/12/0X	As at 31/12/0X	
Sales: £1000 m	Fixed assets: £600 m	Shareholders' funds: £450 m <sup>1</sup>
EBITDA: £165 m	Net working capital: £200 m <sup>4</sup>	Revolving credit facilities drawn: £100 m <sup>2</sup>
EBIT: £105 m		Other long term debt: £250 m <sup>3</sup>
Interest: £25 m	Total assets: £800 m	Total liabilities: £800 m
Tax: £25 m		

Notes:<sup>1</sup>The company's market capitalisation as at 31/12/0X was also around £450 million.

<sup>2</sup>The total amount of the two revolving credit facilities provided by the company's two major banks is £200 million, with £100 million remaining undrawn.

<sup>3</sup>This comprises recently issued long dated notes ranking *pari passu* with the revolving credit facilities.

<sup>4</sup>The company has no short term debt or cash.

Historically, EE has been fortunate in rarely having to provide bid or performance bonds in connection with its contracts, few of which have had a duration of longer than 2 years. However, after the initial bid had been submitted, BURS indicated that its financial advisers were now insisting that the successful bidder be required to provide a performance bond.

A Performance Bond is a form of security provided by a contractor to a developer and consists of an undertaking by a bank or insurance company to make a payment to the developer in circumstances where the contractor has defaulted under the contract.

The value of the bond initially would be equal to 20% of the full contract value (i.e. £80 million), increasing to 30% in the event that the long term credit rating of the successful bidder falls below investment grade at any time during the contract; it would be provided in full at the commencement of the contract and be released without any interim reduction at the end of the ten years.

On approaching separately the company's two major banks for advice (both of which happen to be financial advisers to BURS), the Group Treasurer hears a similar story and has no reason to believe it would be significantly different at other banks: first, each bank would be prepared to make available part of its existing credit commitment as a bonding line to a maximum of around £50 million, but neither would be prepared to provide such a line incrementally; second, the annual fee on the bonding line would be 100 basis points, which is the same as the company's margin on its two bilateral revolving credit facilities that have recently been renegotiated; third, although the two bilateral facilities each has a remaining life of nearly 5 years, the maximum maturity of any bond issued would be 24 months. Fourth, both banks would insist on being able to demand a 100% cash collateral deposit on any bonds issued at any time at their sole discretion in each case plus the cost of borrowing the cash collateral less the offsetting deposit rate. Fifth, there would be no ongoing commitment by either bank to reissue bonds on expiry. Sixth, in the event of a ratings downgrade to sub-investment grade, each bank reserves the right to remove the bonding alternative entirely.

**Required:**

- (a) **Assuming the original WACC of 9% was correct, do you feel this should now be changed in view of the bonding requirements that have been introduced at the last minute? If so, explain why and, making any reasonable assumptions, provide a very rough estimate of what the revised WACC might be.**  
(10 marks)
- (b) **The annual fee payable on an £80 million bond at 100 basis points per annum would be £0.8 million. Should the contract economics be reworked using this level of bonding costs or some higher number and, if so, why? Does this depend in any way on your answer to part (a) above?**  
(6 marks)
- (c) **What advice do you give to: (i) your colleagues in the sales area who are trying to negotiate the contract terms; and (ii) your Board in respect of the risks associated with meeting the proposed bonding requirements in whole or in part?**  
(6 marks)

**QUESTION 5****[Total 16 marks]**

As a treasury consultant you have been called in by the bursar of a UK university to advise on a policy for managing funds provided in Euros by European Union agencies for research projects. At this university receipt of Euro grant is a relatively new phenomenon and these funds are now running in total at EUR 5 million per annum and increasing.

Individual projects are tendered for in Euros in competition with other universities within the UK and across the European Union. Projects usually run for four years. Payments for individual projects are in advance in Euros according to the following formula:

Beginning Year 1 :	40%	of Project Budget
Beginning Year 2 :	25%	of Project Budget
Beginning Year 3 :	15%	of Project Budget
Beginning Year 4 :	10%	of Project Budget
At final settlement	<u>10%</u>	of Project Budget
	<u>100%</u>	

In practice, for this university, the expenditure is typically spread evenly over the four years. Expenditure is mostly in Sterling (eg for salaries, equipment). Total funding for individual four year projects ranges from EUR 0.5 million to EUR 5 million.

The advance Euro payments can be held either in Euro or Sterling at the discretion of the university. These are payments on account against which valid project expenditure can be eventually offset. At the end of each project year the university submits to the EU agency an account, denominated in Sterling, of all project expenditure; the agency audits the expenditure and if satisfied that it is valid, authorises offset against the advance payment.

This authorisation usually occurs between six and twelve months after submission of the account and the quantity of Euros authorised for offset is based on the EUR/GBP spot rate on the date of authorisation.

The sum of annual settlements in Euros under each contract cannot exceed 100% of the grant. However, if the sum is below 100%, the difference must be returned to the agency.

**Required:**

**(a) What are the currency and other risks to which the project funding is exposed?**

**(5 marks)**

**(b) Devise and justify a policy for managing the risks you have identified.**

**(11 marks)**

## QUESTION 6

[Total 11 marks]

In the current financial climate (2009), companies face exceptional uncertainty about the medium term availability and cost of bank facilities, both for re-finance and for new investment.

Banks are responding by offering a variety of medium term forward-start facilities:

- eg (i) for syndicated loans maturing in the medium term, say up to two years in the future, individual lenders may commit to renewing their share of the facility in return for payments representing incremental increases over the interest margins and fees payable under the existing facility. In practice, this resets margins and fees on the individual lender's share of the *existing* facility to current levels.
- eg (ii) for new investment commencing up to two years ahead a facility which the borrower draws down immediately at the full cost but then places with the lender until the forward start date (before which funds may not be drawn) and achieves a negotiated offset.

**Required:**

- (a) What, briefly, are the arguments for and against (i) and (ii) from a corporate viewpoint.

(6 marks)

Your company, with net worth of £500m, is contemplating a £50m investment in two years' time which will be debt-financed and which will increase your borrowings by 25% from £200m to £250m. Gearing currently is 40 %  $\left(\frac{200}{500}\right)$  gross, 36%  $\left(\frac{180}{500}\right)$  net. The intention had been to finance this with a 5-year bullet repayment loan. Your bank has now made an indicative offer for a 7-year facility of type (ii) above with a margin of 200 bp and an offset of LIBID.

For a forward-start swap commencing in 2 years the 5-year rate is 4.06%.

**Required:**

- (b) What are the financial implications of adopting this facility? Quantify where possible.

(5 marks)



## QUESTION 7

[Total 11 marks]

It is mid-2009. Smallco pension fund trustees have liquidated some investments and are holding £3.4m in cash until markets stabilise.

One of Smallco's trustee advisers, Phoenix Asset Management, has proposed their Phoenix Liquidity Fund as an alternative to money market deposits:

Currency options	Sterling, Euro, USD
Risk rating	AAAm by S&P AAA/v1 <sup>+</sup> by Fitch
Weighted average maturity	Target range 30-45 days Maximum 60 days
Maximum individual maturity	397 days (except FRNs)
Benchmark	7 Day LIBID
Performance objective	To provide a net money market rate of return (7 Day LIBID)
Settlement period	Same day
Dealing cut-off time	2 pm for £, €, \$

The AAAm rating by S&P is a money market fund (mmf) rating, more specifically a Principal Stability Rating. This rating addresses the ability of the mmf to maintain principal value and limit exposure to loss. It is not the more commonly used Debt Rating which indicates a borrower's ability to repay principal and interest on a timely basis.

In response to some queries from Giles Dawson, one of the trustees, Phoenix's John Smith responds thus:

"To specifically answer the questions you raised:

**What is it invested in?** – this can be summarised as:- fixed or floating rate instruments, floating rate notes, debentures and asset backed securities. It should be noted that this is a AAA rated liquidity fund and not a cash fund.

**Risk Profile?** – the key points of note are that the fund is AAA rated by S&P and Fitch. The fund is a very well diversified portfolio of high quality liquid assets with the minimum credit rating being A1 for short term and A for long term investments. I have tried to illustrate this by looking at standard deviation (basic measure of volatility/risk – higher the number the more volatile the asset) relative to other asset classes.

- Liquidity fund = 0.4
- Gilts = 6.7
- Corporates = 7.2
- FTSE All Share = 17.0

This demonstrates the fund is a very low risk product with a focus on capital preservation.

In summary the key features of the fund are:-

- Capital preservation
- AAA rating from both S&P and Fitch
- Investment diversification across a range of high quality, liquid assets
- Instant access to funds, while being part of an investors diversified investment portfolio
- Strong performance, typically top 5 performer against peer group, consistently outperforming our 7 day Libid benchmark
- Competitive management fees

Hope this helps – any questions just let me know.”

The trustee summarises the position as he sees it:

“Having reviewed Phoenix’s answer to my question “what form of investment vehicle(s) does Phoenix cash fund comprise?” I think the answer is clear that it is not cash in terms of bank deposits as we might have thought. John Smith is saying that the cash fund takes the form of “fixed or floating rate notes, debentures and asset backed securities” which says bonds and corporate loans to me. The fact sheet, however, shows that their liquidity fund is made up of 51% Term Deposits and Certificates of Deposits, which may or may not be akin to bank deposits? John has likened the fund to cash saying that it offers instant access, capital preservation and strong return performance (although I guess the last two cannot be totally guaranteed). He has also attempted to quantify that the risk is small compared to other forms of investments (including gilts) but is also saying indirectly that the security comes from fund diversity (I have asked for more details on this) and the quality rating of the funds rather than any absolute guarantee.

The question we have to consider is “is this liquidity fund an acceptable form of cash resource in terms of security with which to hold £3.4m until we decide on how, and when, we invest in corporate bonds and equities?”. Also, if we wanted to move £3.4m into bank deposits, what security does this ultimately give? Assuming the same level of guarantee as private deposits (i.e £50k per deposit/bank) then we would need 68 separate deposits to provide total guarantee, which I’m not sure is possible never mind practicable. The alternative would be to have one mainstream bank (or maybe several banks) which we assess to be secure with which to deposit the cash?”

**Required:**

- (a) Is the Phoenix Liquidity Fund (PLF) an acceptable home for the £3.4m “until markets stabilise”? Justify your answer.**  
**(8 marks)**
- (b) Leaving aside the PLF, what home would you advise?**

# MCT General Exam: Solutions

## Outline Answer Content

[I have 32 points but give ½ mark for each good point]

### Question 1 Dividend Policy

[11 marks, 20 mins]

“Thirteenth successive year increase” <sup>1</sup> - stability <sup>2</sup> in the pattern of dividend payments is a key consideration, so both investors and company know what to expect.

Maintaining <sup>3</sup> such a dividend policy “despite a fall in sales and profits” <sup>4</sup> is a key aspect of such a stable policy. But subject to the dividend payments being maintainable <sup>5</sup> in future ie the dip in profits must be seen by management as temporary. <sup>6</sup> Else they would have to consider a cut <sup>7</sup> in the dividend payout which would be seen as a very strong negative <sup>8</sup> “signal” to the market about future prospects. Prospects are worse than the market anticipated hence the profit revision. <sup>9</sup>

Dividends are usually pitched firstly at a level which can be maintained, allowing for the risks/volatility <sup>10</sup> in earnings that characterise the business. This is summarised in the dividend cover <sup>11</sup> ratio.

A period of greater uncertainty and possibly reduced earnings is indicated <sup>12</sup> given the economic crisis, exposure to construction and announced cost cutting programme, so this is a critical <sup>13</sup> decision for the company right now. However, the share price firmed slightly on the announcement so the company’s decision looks “right” so far. <sup>14</sup>

Secondly dividends are pitched at a level, which the company can “afford” <sup>15</sup> in terms of both cash flow <sup>16</sup> and earnings, given other cash requirements of the business.

Dividend cover is 1.88 <sup>17</sup> (2008 1.79, 2007 1.65). For relatively risky sector this looks like a low level of cover. <sup>18</sup>

Dividends can only be paid out of distributable <sup>19</sup> reserves but retained earnings stand at £176m while the annual dividend is £27m, so no problem at present. <sup>20</sup>

The cash flows for 2008 and 2007 show that cash from operations covers interest (low <sup>21</sup> gearing) and capex (sufficient <sup>22</sup> for replacement) comfortably, <sup>23</sup> leaving £37.9m (£38.7m) for dividends, with a cash cover level of 1.39 (1.49) <sup>24</sup> - an excellent level of cover. <sup>25</sup> Unless 2009 is dramatically worse cash flow is not inherently a problem.

Thirdly dividend policy would reflect the management’s views regarding the structure of returns to shareholders - ie dividend yield versus share-price based capital growth. <sup>26</sup> (The yield looks better than average and the P/E is about average). <sup>27</sup>

This has implications for the after-tax returns to shareholders given differential tax treatment. NB. the “cliente effect”.<sup>28</sup>

In a world without tax differentials and other market imperfections both company and shareholders should be indifferent to the mix of dividend versus retained earnings/capital gains (“dividend indifference”).<sup>29</sup>

Acquisitions have led to increased borrowing and the company intends to<sup>30</sup> continue its acquisition strategy. Any sizeable acquisitions in future would have to be largely debt funded<sup>31</sup> which might be difficult in the current climate. But the solution would be to cut the acquisitions not the dividend.<sup>32</sup>

## Question 2 Valuation

[10 marks, 18 mins]

2a) (4 marks, 7 mins)

[I have 14 points so  $\frac{1}{3}$  mark for each good point made]

Valuation models

$$P = (\text{eps} \times P/E) = (\text{also}) \text{dps} / (\text{Rf} + \text{equity premium} - \text{dividend growth})^1$$

This formula relates P/E and the gilt<sup>2</sup> yield.

$$100 = 6.897 \times \underline{14.5} = 3.0 / \underline{0.0375}^3 + 0.045 - 0.0525.$$

(see workings below).

$$\text{Share price} = \text{dividends}^4 / (\text{required}^5 \text{ return less dividend}^6 \text{ growth}) \quad P = d / (K_e - g)^7$$

Therefore share price increases as growth increases or the required return<sup>8</sup> falls. A reduction in<sup>9</sup> interest rates will increase prices.

$$K_e = ^{10} R_f + \beta (R_m - R_f) = 3.75 + (1.0 \times 4.5^{11}) = 8.25\%^{12}$$

$$\therefore \text{share price} = 100 = 3 / (0.0825 - 0.0525)^{13}$$

Note also that required return = dividend yield plus growth rate ie  $K_e = \frac{d}{P} + g$   
the expected growth rate is 5.25%<sup>14</sup> (8.25 - 3.0).

NB CAPM = Div Growth Model

$$K_e = R_f + \beta (R_m - R_f) = \frac{d}{p} + g \quad \therefore 3.75 + 4.5 = 3.0 + 5.25$$

2b) (2 marks, 4 mins) [I have nine points so 1/3 mark for each good point]

$$\text{eps} = \frac{100}{14.5} = 6.8966p^1$$

A higher P/E ratio means a higher price if all else remains the same<sup>2</sup>

$$\text{new } P = 6.8966 \times 20^3 = 137.93p^4 \quad \text{OR} \quad 100 \times \left( \frac{20}{14.5} \right) = 137.93$$

$$\text{new dividend yield} = 3 / 137.93 = 2.175\%^5$$

$$\text{growth} = \text{required return minus}^6 \text{ dividend yield}$$

$$= 8.25 - 2.175^7$$

$$\text{growth} = 6.075\%^8 \quad (\text{up from } 5.25\%)^9$$

2c) (4 marks, 7 mins) [I have eight points so 1/2 mark for each good point]

	<b>current</b>	<b>Fair value</b>	
Treasury yields	3.75%	4.10% <sup>2</sup>	(+0.35)
Bond yields (+50bp)	4.25% <sup>1</sup>	4.60%	(+0.35)
required equity return (Ke)	8.25%	8.60% <sup>3</sup>	(+0.35)
expected growth rate	5.25%	5.25%	(+0.35)
Ke - g	3.00%	3.35% <sup>4</sup>	(+0.35)
price	3/0.03	3/0.0335 <sup>5</sup>	
price	100	89.55 <sup>6</sup>	
	"over value"	"fair <sup>7</sup> value"	

$$\text{Over valued by} \left( \frac{100}{89.55} \right) - 1 = \underline{\underline{11.7\%}}^8$$

### Question 3 Debt-Equity Re-financing

[19 marks, 34 mins]

3a) (9 marks, 16 mins) [I have 31 points so 1/3 mark per good point]

2007 structure;

Equity	640	30%
Unsecured bonds	330	16%
Secured bonds	950	54%
Revolver (drawn)	<u>200</u>	
	2120	

Equity 30%, <sup>1</sup> junior debt 16%, <sup>2</sup> senior debt 54% <sup>3</sup>

Debt / EBITDA multiples; senior debt 6.76, <sup>4</sup> total debt 8.7, <sup>5</sup> EV 12.47 <sup>6</sup>

Based on EBITDA of 170m <sup>7</sup> (NB average EBITDA = 124)

EBITDA / Interest = 170/100 <sup>8</sup> = 1.7 cover <sup>9</sup> - low

But with PIK flexibility on estimated 22.30 m <sup>10</sup> of interest = 2.19 cover <sup>12</sup> (6.76% min x 330m) <sup>11</sup>

Very highly leveraged <sup>13</sup> for a cyclical <sup>14</sup> business dependent on the US highly-leveraged housing <sup>15</sup> market. Value multiple looks much too high "at the top of the market", <sup>16</sup> and at a 31% premium.

But 200m additional committed facility would cover two years' full interest. <sup>17</sup>

Proposed 2009 structure;

60% Equity =	150m	25.0%	new equity (cash)
35% Equity =	87.5m	14.6%	conversion of secured
5% Equity =	<u>12.5m</u>	<u>2.1%</u>	conversion of unsecured
Total equity	<u>250m</u>	<u>41.7%</u>	
Bonds	<u>350m</u>	<u>58.3%</u>	conversion of secured
	<u>600m</u>		
	<u>(70) cash</u>		
	<u>530</u>		

Equity value = 150m/0.6 <sup>18</sup> = 250m <sup>19</sup>

Equity 250m (42%), debt 350m <sup>20</sup> (58%) <sup>22</sup> = 600m <sup>21</sup>, cash = 70m <sup>30</sup>

Debt / EBITDA, based on "possible" 80m; <sup>23</sup> debt 4.375, <sup>24</sup> EV 7.5 <sup>25</sup>

EBITDA / Interest = 80/35 = 2.29 <sup>27</sup> cover (interest 10% on 350m) <sup>26</sup>

Comfortable <sup>28</sup> given the assumed level of EBITDA and also the interest <sup>29</sup> "flexibility" option should EBITDA stay below 80m before "recovery". If EBITDA recovers to eg 120 interest cover 3.43, debt/EBITDA <sup>31</sup> = 2.9, much better.

3b) (10 marks, 18 mins) [I have 25 points so 1/2 mark for each good point]

Future EV is crucial for evaluating the new shares <sup>1</sup>

Prior to re-financing - secured bonds trading at 50% (loss of 415m), probably means total loss on equity (64m) and unsecured bonds, no loss on secured facility. <sup>2</sup>

EV = 2120 - 1445 - cash 120 = 555 <sup>3</sup>

EV on re-capitalisation = 600 - 70 = 530 <sup>4</sup> (in right ball park)

Current EV to potential range of EBITDA (40, 80, 160?) = 13.3, 6.6, 3.3 <sup>5</sup>

Pre-2007 EV/EBITDA =  $(2120 / 1.31) / (\text{ave } 155 \text{ to } 170) = 1618 / 162.5 = \text{say } 10 \times$   
 EV range at 10 multiple = <sup>6</sup> 400, 800, 1600  
 Reduced to  $7 \times$  <sup>7</sup> for current market? = 280, 560, <sup>8</sup> 1120 - looks about right.  
 Up-side equity value; EBITDA 160m  $\times 7 =$  EV of 1120, less 350 of debt = 770 equity <sup>9</sup>

New equity = £150m, as above with potential upside to 770  $\times 60\%$  gives 208% return <sup>10</sup>

Banks – total recovery and assume all interest paid <sup>11</sup> - no loss.

Original shareholders – total <sup>12</sup> loss of 640m but some possible recovery for eg Artemis through new equity investment under recovery plan eg  $640 + 150 = 790$ , possibly worth  $770 \times 0.6 = 462 = 42\%$  loss <sup>13</sup>

Unsecured bondholders – investment of 350m + 10 PIK <sup>14</sup>, reduced to 5% equity stake estimated at  $12.5\text{m} (5\% \times 250) = 96\%$  <sup>15</sup> loss, but with up-side potential to  $38.5\text{m}$  <sup>16</sup>  $(5\% \times 770)$  gives 81% loss. <sup>17</sup>

Secured bondholders – investment of 950m reduced to;  $350$  <sup>18</sup> plus  $(35\% \times 250)$  <sup>19</sup> =  $437.5$  <sup>20</sup> gives 54% loss, <sup>21</sup> but with upside potential to 350 plus  $(35\% \times 770) = 619.5$  gives 35% <sup>22</sup> loss.

“Secondary market” bond holders bought at equivalent of  $(950 \times 0.5)$  <sup>23</sup> = 475, now worth  $437.5$  <sup>24</sup> but potentially worth 619.5 ie 30.4% gain. <sup>25</sup>

Conclusion: old shareholders lose all.

new equity is priced so virtually no downside, lots of upside

existing bondholders given a chance of reducing their (big) losses

secondary market bondholders buy at estimated bottom value in the hope of a rescue deal like this so as to make a killing.

#### Question 4 Bonding Lines: Financing

[22 marks : 40 mins]

##### (a) Impact on WACC

(10 marks : 18 mins)

Assuming the original WACC of 9% was correct, do you feel this should now be changed in view of the bonding requirements that have been introduced at the last minute? If so, explain why and, making any reasonable assumptions, provide a very rough estimate of what the revised WACC might be.

$$\begin{aligned}\bullet \text{ Original WACC} &= \frac{450}{800} \times 12\% + \frac{350}{800} \times 5\% \\ &= 6.75 \quad + \quad 2.19 \\ &= 8.94\%\end{aligned}$$

- £400m 10 year contract spread evenly over 10 years is equivalent to £40m p.a. out of a total current revenue of £1,000m, ie 4%.
- Performance bond without cash collateral increases cost of contract by £0.8m p.a. fee (£80m x 1%) or £1.2m if EE is downgraded (£120m x 1%).

If £40m revenue earns 13% IRR then annual costs must be of the order of £35m ie, PV of £40m discounted at 13% is £35.40. In broad terms, project generates about £4m p.a.

This is materially affected by the £0.8m/£1.2m performance bond fee.

- Cash collateral call included in WACC calculation, assuming 3% on collateral deposit:

$$\begin{aligned}&\frac{450}{800} \times 12\% + \frac{430}{800} \times 5\% - \frac{80}{800} \times 3\% \\ &= 6.75 + 2.69 - 0.30 \\ &= 9.14\%\end{aligned}$$

- The £0.8m bond cost still applies; adding on the net 2% cost of collateral (£1.6m) brings the total potential bond cost to £2.4m p.a.
- This project is small in revenue terms but long term (10 years) compared with the EE norm of 2 years.
- The bonding dimension brings with it risks wholly disproportionate to project size eg:
  - potential to soak up 80% or more of borrowing headroom, with knock-on impact on ability to fund other projects



- risk of refinancing bonding line every two years or of losing it at no notice
- level of bond guarantee (£80m) in relation to annual revenue of £40m.
- cost impact on project (£0.8m - £2.4m potential bond fee cost).

In other words the riskiness of this project must be way out of line with the rest of the business.

- So, it is inappropriate to adjust the corporate WACC for this project.

Instead, the unacceptable risks associated with the project (eg refinance of bond line) should be negotiated out and any residual additional costs (eg cost of withholding part of payments as an alternative to a bond) priced into the contract.

- The marginal impact on WACC of the cash collateral call (8.94% to 9.14%) ignores the fact that the company  $\beta$  would need to change if the BURS project became the norm.
- The better approach would be to calculate a project WACC, assuming 4% of equity, 4% debt (project revenue is 4% of turnover) and adjust for cash collateral or fee:

#### Corporate WACC

- 4% Equity & debt	$\frac{18}{32} \times 12\% + \frac{14}{32} \times 5\%$	= <u>8.94%</u>
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#### Project WACC

- All Equity (£80m collateral)	$\frac{98}{32} \times 12\% + \frac{14}{32} \times 5\% - \frac{80}{32} \times 3\%$	= <u>31.44%</u>
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- Pro Rata (£80m collateral)	$\frac{63}{32} \times 12\% + \frac{49}{32} \times 5\% - \frac{80}{32} \times 3\%$	= <u>23.78%</u>
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- All Debt (£80m collateral)	$\frac{18}{32} \times 12\% + \frac{94}{32} \times 5\% - \frac{80}{32} \times 3\%$	= <u>13.94%</u>
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#### Project WACC

- Fee only	$\frac{18}{32} \times 12\% + \frac{14}{32} \times 5\% + \frac{80}{32} \times 1\% \times (1 - 0.3)$	= <u>10.69%</u>
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- This ignores the option which the banks state they wish to have to unilaterally call the cash collateral.

- In Summary:
  - This project is small (4% revenue) in the context of the overall business
  - But it is hugely risky if contracted on the proposed BURS terms
  - Adjusting the corporate WACC is in effect spreading the cost impact of the bonding on this small project across the whole of the rest of the business
  - So the best way to reflect the risk is to focus on the project itself
  - This means negotiating away the unacceptable (potentially terminal!) risks and pricing in the abnormal residual risks to the contract price.

**(b) Impact on contract terms**

**(6 marks : 11 mins)**

**The annual fee payable on an £80 million bond at 100 basis points per annum would be £0.8 million. Should the contract economics be reworked using this level of bonding costs or some higher number and, if so, why? Does this depend in any way on your answer to part (a) above?**

Spotting the disproportionate riskiness of the project and therefore focussing on the negotiation of project contract terms and project pricing rather than on Corporate WACC obviously has a major impact on how students answer part (b).

The most critical element is negotiating with the customer and the banks acceptable terms for providing some sort of bonding equivalent. Failure here would be a deal breaker.

If some acceptable solution is concluded then the economic impact of revised terms would be priced into the contract fee eg:

- Pass through of incremental bank fees (if any) and bank financing costs for collateral (if any)
- Some uplift on return for reduction in liquidity and opportunity cost if whatever is agreed materially impacts borrowing headroom

[Some of the calculations and discussion in (a) might more properly fit in here, eg Project WACC].

**(c) Operational impact: sales team & board**

**(6 marks : 11 mins)**

**What advice do you give to: (i) your colleagues in the sales area who are trying to negotiate the contract terms; and (ii) your Board in respect of the risks associated with meeting the proposed bonding requirements in whole or in part?**

- (i) • Bonding costs material: should be reflected in increased costs in a revised bid.
- Bonding risks are huge: if cannot mitigate by negotiation may need to walk away
  - Possible mitigation:
    - withholding payment/cash escrow account
    - why £80m flat throughout?
    - at best, two year rolling bond if such can be guaranteed by banks
  - As a policy, sales team must always involve treasury immediately when customers request bonding
  - So point out to BURS:
    - post-bid bonding request is material change
    - signal implications for EE
    - write bonding out of deal altogether or negotiate some form of alternative comfort for customer which can be costed, provided with certainty and priced into the deal.
- (ii) • Bonding introduces huge financial risks into this particular project which are unacceptable:
- if cash called for bond, may be insufficient liquidity for company
  - opportunity cost of not being able to finance other projects
  - bond guarantee refinance risk
  - cost of bond, both fee only and fee + net cost of collateral
  - potential uplift to 30% of value of total contract.
  - These risks must be reduced to acceptable levels by negotiation with customer and banks (eg rolling 2 year, cash escrow).
  - The costs should be priced into the contract
  - Company survival could be threatened so be prepared to walk away.

## **Question 5 Hedging University Euro Grant**

**[16 marks : 29 mins]**

### **(a) Risks to Project funding?**

**(5 marks : 9 mins)**

#### **(i) Currency risk**

- funding is in EUR, costs in GBP
- settlement is at spot up to two years post spend, giving rise to transaction risk and possibly also translation risk because of the long settlement period.
- while GBP spend may be to budget, the benefit of aggregate underspend in EUR terms due to weakening GBP does not benefit the university, whereas aggregate overspend because of strengthening GBP is not re-imbursable . . . in other words the treatment is asymmetric and the currency risk is with the university.

#### **(ii) Liquidity risk**

- the university is in funds to a substantial amount throughout the term of the contract
- so it needs to invest the surplus funds securely
- it may need to exchange enough EUR for GBP to fund each years GBP costs if the project is ring-fenced financially within the university
- however, if these purchases of GBP complicate the fx hedging and if the project is not ring-fenced it may be possible to hold the funds in EUR and draw down against approved claims.

#### **(iii) Competency**

- receipt of EUR grant is new phenomenon for this university, so the competence to assess and manage the risk may not be present
- the authority to hold and exchange currency and to write derivative contracts may not exist
- the internal administrative processes and procedures to enable research staff to communicate on these issues with finance may not exist.

**(b) Policies for managing risks****(11 marks : 20 mins)****(i) Currency risk**

- the risk to the budgeted completion of the project is that the aggregate EUR equivalent of each annual GBP claim exceeds the EUR tender amount which won the project-grant in the first place
- to make the tender bid in EUR, the university must assume a GBP/EUR exchange rate, let's say the forward rate for GBP/EUR at 21, 33, 45 and 57 months ahead of the start of the project
- if at each successive claim date GBP has weakened against the related EUR forward rate used to calculate the bid, then less EUR than budgeted will be needed to purchase the budgeted GBP. In aggregate the budgeted EUR amount will exceed the GBP actual cost and the EU agency will be in the money
- if, however, at all (or even some) of the claim dates GBP has strengthened against the budgeted forward rate, then GBP costs will not be fully re-imbursed (or the project will need to be curtailed by agreement with the EU agency)
- to hedge this risk it will be necessary to buy a strip of ATM options which enable the university to sell the EUR proceeds of each claim for GBP, where it has strengthened above the forward rate used to price the tender bid.

The GBP thus obtained will exceed the budgeted GBP and the surplus can be put aside to make good any shortfall existing at the final settlement.

If the spot rates at the claim dates fluctuate around both sides of the option strike it is possible that the university may show a profit.

- a consequence of the policy outlined above is that if forward rates imply a weakening of GBP then the university tenders may undercut those of competitors not using this policy. Of course if GBP is strengthening then the opposite applies. Options costs will, of course, add to the bid amount
- finally, as the university is in funds for most of the project period, there will be significant interest income to book.

**(ii) Liquidity risk**

- having decided in which currency to hold the surplus grant funding, the usual SLY (security, liquidity, yield) considerations apply.

**(iii) Competency**

- the factors listed in part(a) would need to be addressed by the university f.d./treasurer/bursar
- the implementation might not be as straight forward as it could seem because of the academic/administration divide that exists in some university environments, so outsourcing might be a short term solution.

## Question 6 Bank Structured Facility

[11 marks : 20 mins]

### (a) Arguments for and against (i) and (ii)

(6 marks : 11 mins)

(i)

FOR:

- hedges part of refinance risk
- bypasses unanimous “lender consent” normally required to extend an existing facility
- may entice other lenders to join in because of immediate uplift in margin and fee without any increase in amount of exposure (except maturity).

AGAINST:

- locks in what may turn out to be a high margin
- commits to an extension early which may prove unnecessary
- disparate rates on current facility margin and fees may discomfort other lenders
- fixing in effect the rates ahead of time for part of a refinance may be felt to prejudice other lenders’ interests
- the terms of forward start facilities, eg the treatment of margins and fees in relation to covenants, may raise documentation issues.

(ii) FOR:

- secures funds so project planning can proceed with certainty eg re making commitments, re pricing.

AGAINST:

- locks in a margin which may look expensive, come drawdown
- immediate drawdown enlarges both sides of the balance sheet
- the “effective” commitment fee may be significant enough to effect the viability of the proposed investment
- the p/l impact may impact covenants.

### (b) Financial implications

(5 marks : 9 mins)

- Balance sheet financial assets and liabilities increase by £50 for 2 years:

- Gross gearing:  $\frac{250}{500} = 50\%$  (10% increase)

- Net gearing:  $\frac{250-70}{500} = 36\%$  (No change)

- P/L increase in net interest cost:

- £50m x (200 + 12.5) bp = £1,062,500 p.a.

- Need offset arrangement in documentation so that if bank fails and deposit is lost the loan is cancelled.

- Increase in project return required over 5 years to compensate for extra interest cost pre-drawdown:
  - FV of 212.5bp p.a. at year 2 discounted at 4.06% = 433.63
  - PMT of 433.63bp spread over 5 years discounted at 4.06% = 97.57
  - so project return needs to increase by 0.98%

### Question 7 Investing Liquidity: Counterparty Risk

[11 marks, 19 mins]

#### • Comments and Observations

Money market funds have a long history in the US and have become commonplace in the UK over the past decade. “Long considered the safest of safe havens for retail investors and corporate treasurers, money market funds promise never to “break the buck” or to allow a dollar to fall below its value”. (FT 30.11.07).

The AAAM (S&P) is a money market fund rating, more specifically a Principal Stability Rating. This rating addresses the ability of the mmf to maintain principal value and limit exposure to loss. It is not the more commonly used Debt Rating which indicates a borrower’s ability to repay principal and interest on a timely basis. Phoenix’s John Smith does not make this distinction in his response.

Smith quotes VAR comparison (presumably historical volatility of principal value but not actually defined in his note).

Smith does point out that the PLF is a *liquidity* fund and not a *cash* fund.

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#### (a) Is Phoenix Liquidity Fund an acceptable home?

(8 marks : 14 mins)

Smallco has divested part of its pension fund securities portfolio because the pension trustees are uncomfortable about the uncertainties surrounding financial markets eg equities, debt, gilts. It is clear, therefore, that their preference is to hold cash/bank deposits until they can form a coherent view about future financial markets’ risk/return.

The proposal from Phoenix is understandable, given the historic reputation of mmfs. However Giles Dawson’s comments are very much to the point: the fund is significantly invested in securities, albeit of high quality and short duration; the stability of the fund depends on the diversity and quality of the securities; the principal value, although sacrosanct (“never break buck”), is not a par value in the same sense as a bank deposit.

So in character the mmf is akin to the pension fund portfolio which the trustees have divested in favour of cash. Therefore investing in it could be seen as jumping out of the fire into the frying pan rather than onto the hearth.

When severe market disturbance occurs, the correlation factors which underpin diversification fail, asset values are problematic and liquidity dries up.

So the real issue here is that by 2009 investors have seen many previously assumed certainties destroyed and have a duty of care, if in a trustee role, to heavily discount any remaining, like “never break the buck”.

One fund did in fact “break the buck” and had to be rescued by its parent. So it is important to select a fund with a strong parent. Some treasurers also insist on knowing how much “own funds” the parent has invested in such funds since there is a risk that when danger looms “own funds” may be pulled, leaving clients to carry the losses.

**(b) What would be an acceptable home?**

**(3 marks : 5 mins)**

So in normal circumstances bank deposits would be the obvious choice. As Dawson implies, security is the key issue, with the failure of so many UK banks and the £50k on individual bank deposit guarantees.

Paradoxically the rescued banks (RBS, HBOS) may provide the best prospects as the Government is unlikely to allow a failure here . . . . however the Government itself is on negative watch and might discriminate between personal and corporate deposits if under extreme pressure.

*Footnote: The company on which the scenario is based placed the funds through its broker with HBOS. The funds are covered by the broker's guarantee insurance.*



## MCT General Exam: Examiner's Report

### OVERVIEW

The examination is in two parts. The first part is a normal closed-book examination (the General Exam.) designed to test knowledge and understanding across the whole syllabus. There were seven questions, all compulsory, designed to test the all the core subject areas: Corporate Finance and Funding, Risk Management and Strategic Treasury Management.

The second part is based on a specially-written case study, based on a real company, which students are given a week in advance to allow preparatory study. This exam is designed to test knowledge and understanding in depth, also application to a simplified real-life situation. Again, this is a closed-book exam. There were eight questions, all compulsory. The nature of the questions was driven in large part by the issues peculiar to the case company, so there is not necessarily the same balanced spread of questions across all core topics as with the Exam. However, in selecting and framing the Case Exam. questions the examiners attempt to range as widely as possible over the syllabus.

The results for the General Exam. and the Case Exam. plus the combined results are tabled below.

	<b>Exam</b>	<b>Case</b>	<b>Combined</b>
Marks	44.0%	51.9%	48.0%
Questions	7	8	15
Students	12	12	12
Pass #	3	9	4
%	25%	75%	33%

Given the low average marks and the low pass rate these results were extremely disappointing. The results for the Case Exam were very similar to those at the previous sitting, in April 2009, but those for the General Exam were very poor. The

subsequent reports give detailed comments about the perceived weaknesses detected on particular questions and in candidates' overall approach to these examinations.

# The General Exam - October 2009

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## Question 1

(11 marks, 20 mins)

Question content - review the considerations relevant to deciding a dividend policy, with reference to the commentary and data on a given company.

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This straightforward question was reasonably well answered with eight passes out of twelve and an average mark of 56%. Virtually all the relevant points were made by one or another of the candidates but no-one got all the points.

Points missed by weaker candidates;

- a) not relating very well to the description given of the company's trading situation eg more likely to relate dividend cover level to a "typical single A rated company" than to the sector risk and trading record given.
- b) distributable reserves are required for payment of dividends.
- c) making rough adjustments to actual cash flows for differing capex levels.
- d) concluding that acquisitions had to be funded from internal cash flow before dividends could be paid (acquisition was funded 86% by debt).
- e) policy choice of "high dividend" versus "high growth" stocks related to "clienteles" effect.
- f) not fully appreciating the significance ("signalling effect") of a dividend cut, which cannot be undertaken lightly.

"Dividends are the cash that is left over after everything else." - well, that is one view!

## **Question 2**

**(10 marks, 18 mins)**

A three-part “theory” question testing knowledge of valuation principles and methodology and ability to manipulate both concepts and numbers.

Question content - explain the links between P/E ratio, treasury yield, share price and growth expectations using the dividend growth model. Also relationship between treasury, bond and dividend yields, also total equity returns. Illustrate with a numerical example.

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This proved to be a tricky little question which no-one passed, average score 19%. I have compiled a separate list of “howlers” from the answers given.

Students ignored some of the information given eg dividend yield of 3%.

Many candidates got the key valuation formula wrong (even ignoring  $P_0$  and  $d_1$ );

$$P = d / (Re - g)$$

$$100 = 3 / (0.0825 - g) \text{ - from the information given, see below for calculations}$$

$$\text{NB. Therefore } g = 0.0525$$

Many did not see the significance or bother to calculate the CAPM formula for required return/cost of equity (Re).

$$\text{So } P = d / ( [ (Rf + \beta (Rm - Rf) ] - g )$$

$$100 = 3 / ( [ 3.75\% + (1.0 \times 4.5\%) ] - 5.25\%)$$

Given in the question were P, d,  $Rf + \beta$  (the whole market).

Candidates only had to make an assumption about  $Rm - Rf$  and calculate g (or vice-versa). Some made assumptions about d,  $Rm - Rf$  and g, some just assumed Re and g - so they got in a mess.

Really understanding the following re-formulation would have made life so much easier;

$$R_e = (R_f + \text{company equity premium}) = (\text{dividend yield} + \text{dividend growth})$$

In the example:

$$8.25 = (3.75 + 4.5) = (3.0 + 5.25)$$

Quite a few candidates alarmingly stated that the cost of equity (required return) is simply the reciprocal of the P/E ratio. So for high growth company with P/E of 25x shareholders only expect a total return of 4% and for a low growth company on 8x they require 12.5%!

The ACT had to kill off this idea from the original manuals 20 years ago.

Amazingly many did not seem to really understand the fundamentals that higher growth gives a higher value and a higher P/E ratio, while higher interest rates give the opposite.

On the question addressing principles of valuation (Question 2c) if higher interest rates would result in a “fair value” of equities is the market currently over-valued or undervalued? Most got this the wrong way round. Nobody could work the numbers so three candidates got ½ mark out of 4, the rest no marks at all.

### **Question 3**

**(19 marks, 34 mins)**

Question content - A two-part, very practical question about financing structures and about the implications of financial re-structuring on the returns to the various categories of debt and equity investors.

The average mark was 43% with only four passes out of twelve.

Question 3a asked for analysis and comment on the suitability of i) the initial leveraged buy-out structure and ii) the subsequent de-leveraged re-financing structure. The average mark was 50% with six passes. The most common weakness was presenting the bare numbers (often correct) with little commentary or evaluation in relation to the company/sector/market context given in the question. Good answers picked up on both the sector's housing market risks and the historical volatility in the company's EBITDA.

Quite a few failed to understand the fundamental mechanics of the debt-for-equity swap and so got the debt and equity numbers all wrong for the new de-leveraged structure eg adding the debt and equity from the first structure to that from the new structure.

Initial equity was 640m, initial debt consisted of secured bonds of 950m, unsecured bonds 330, revolver 200m. From the text of the question;

Disaster struck and the secured bonds are trading at 50%.

"a new consortium will inject USD150m into the company for 50% of the equity"

"secured bondholders will write off their claims in exchange for a 35% equity stake plus USD350m of new bonds"

"unsecured bondholders will exchange their securities for 5% of the equity"

"the revolver will be repaid in full"

Failure to understand some fundamentals;

- i) if the new deal involves 100% of the shares what stake do the original shareholders hold?
- ii) if the secured bonds are trading at 50% what are the unsecured bonds and the shares worth?

iii) “write off”, “exchange”, “repaid” mean all the original debt and equity financial instruments are gone.

iv) the new equity is not 640m + 150m

v) there is only 150m of new cash into the company.

Question 3b required analysis of the winners and losers from the original debt and equity investors, appropriately quantified. The average mark was 36% with four passes out of twelve. The weaknesses listed above did not help.

Failure to understand in principle why some of the private equity investors have thrown “good money after bad” ie that there is potentially a big upside on the 150m new equity. And therefore there is also a considerable upside potential for the former bondholders (especially the secured), and especially if purchased at 50% of face value.

Total failure to quantify this potential upside based on part multiples and perspective EBITDA (because candidates seem weak on valuation generally).

Company EV/EBITDA was 1618/162.5 before buy-out. EBITDA now negative with possible recovery to 80m or even 120m. Future EV is therefore in the range 800m to 1200m as compared with the EV of 550m (which most candidates get right) implied in the refinancing deal.

The order of seniority/subordination was clear in the question yet some candidates managed to conclude, based on faulty calculations but without a second thought, that “the winners were, of course, the original shareholders, and the unsecured bondholders while the losers were the secured bondholders and also the bank who got paid back in full so no more fees for them - incredible!”

### **Summary Questions 1 to 3**

**(40 marks, 72 mins)**

Average mark 40.3%, only one pass out of 12 with a mark of 51%. To be fair there were five other candidates with 47% to 49%, and two with low 40% scores, but one in the 30%s and three in the 20%s. These are the worst marks reflecting the worst performance I have even seen in the 20-odd years of the ACT.

Do they understand the corporate finance and financing fundamentals at all?

#### **Question 4**

**(22 marks, 40 mins)**

This question was about assessing the impact of a customer request for a performance bond guarantee on an engineering contract. The contract represents only 4% of the contractor's annual turnover but is of 10 year term, in contrast with the norm of 2 years for the contractor; and the proposed features of the bonding are hugely disproportionate to the size of the project in terms of the risks they pose to the contractor.

The first part of the question asks if an adjustment to Corporate WACC, reflecting the debt implications of the bonding line, is the appropriate way forward. The short answer is that, given the small contract size and huge risk, the focus should be on project terms and project WACC. Only about a quarter of students grasped this and of the remainder those who tried to adjust corporate WACC generally got the calculation wrong. Only three students got a pass mark on this part,

The second part of the question focussed on whether/how the contract economics should be re-worked to reflect the bond impact. All agreed with the need to re-work but few produced much in terms of logic or metrics and only two passed.

The third part required students to say what advice they would offer to the sales team and to the board. To the former the advice would be to vigorously resist/negotiate the bonding terms, give the implications, and to the latter to be prepared to walk away if bonding risk cannot be mostly removed. Pass rate on this part was much higher at two thirds of candidates.

However the overall pass rate was only a third.



### **Question 5**

This question was about identifying and hedging risks associated with a UK based university receiving grants in Euros to conduct research in the UK, projects lasting for typically four years with payments in advance in Euros and signed off as much as 18 months later when sterling costs have been validated at the then spot rate.

A key feature is that while GBP spend may be to budget, the benefit of underspend in EUR terms due to weakening GBP does not benefit the university, whereas aggregate overspend, because of strengthening GBP is not reimbursable. In other words, the treatment is asymmetric, the currency risk is with the university and because of the asymmetry options are the only way to fully hedge the risk.

Students are asked to identify the risks to projects funding. As well as the currency risk already mentioned there is also liquidity risk depending on how the university decides to deploy funds paid in advance.

There is also competency risk. Universities may not have the expertise or procedures to handle what on the surface looks like a simple situation but in practice is quite complex due to large timing differences and the asymmetric treatment of fx gains and losses referred to above.

The overall pass rate on this question was 17%. The first part (to identify the risks) was reasonably well executed but the second part about policies to manage the risks identified fell well short in many cases. Some students adopted a risk-map (impact - probability matrix) approach but generally this did not provide a prescription which was specific enough.

### **Question 6**

**(11 marks, 20 mins)**

Forward start bank loan facilities began to appear in 2008 as banks with funds to lend began to offer borrowers forward dated refinance at current (2008-09) very high rates, taking advantage of corporate concerns about future availability.

This question described two examples of forward start facilities and asked students to discuss the pros and cons of each. Happily, everybody passed this part of the question.

The second part of the question provided some data about one of the examples which had a significantly negative cost of carry from contract to forward start date. Students were asked to identify the financial implications - mainly the cost of carry issue already noted above which was significant enough to prejudice the viability of the project which it was intended to finance and also had more obvious gearing and p/l impacts.

Only three students identified the project viability issue and all had difficulty quantifying it.

However, most students identified the more obvious impacts and there was a 75% pass rate on this question.

### **Question 7**

This question is about whether or not to park some pension fund cash in a liquidity fund (money market fund) in mid-2009 until financial markets settle and the cash can be invested in equity/capital market securities.

Students were provided with details about the features of the fund and copies of correspondence between the fund manager and a trustee of the pension fund. Students were asked to decide whether or not the liquidity fund was an acceptable temporary home for the pension fund cash.

Opinion was divided amongst those who expressed an opinion, and several did not!

A second minor part to the question asked students to specify their preferred home for the cash. Most went for gilts or quality bank deposits.

Pass rate on this question was just under 50%.

### **Summary Questions 4 to 7**

**(60 marks, 108mins)**

The overall quality of answer was disappointing and among the lowest I can recall.

There was evidence of a very wide range of ability, but with relatively few towards the top end.

In general, students fared better on questions requiring qualitative/narrative answers. There seemed to be a general lack of appetite for engaging in quantitative analysis.

