



**LEADING TREASURY
PROFESSIONALS**

Examination Paper, Solutions and Examiner's Report

**Paper:
Certificate in Corporate Finance
& Funding**

April 2014

SECTION A – Answer ONE COMPULSORY question

QUESTION 1

Vaportrail Inc is a new company that intends to provide executive jets on hire for use by the CEOs and other senior executives of its client firms. The company is trying to choose between the following two alternative strategies:

Strategy 1:

- Acquire second-hand aircraft with a remaining useful life (for the company's purposes) of about 7 years, and replace with similar assets at the end of the useful life.
- Appropriate second-hand aircraft can be obtained at a price of about \$3.5 million each but, due to their age and lower fuel efficiency, about \$2 million would need to be spent on the annual operating and maintenance costs of such an aircraft.
- Under the relevant Alternative Depreciation System, Vaportrail Inc will be entitled to claim tax depreciation on the purchase cost on straight line basis over the 7-year period, starting from the first year after purchase.
- It is estimated that the residual value of such aircraft on the second-hand market when they are replaced after 7 years would be approximately 30 percent of the price that Vaportrail paid for them.

Strategy 2:

- Acquire new aircraft with a useful life (for the company's purposes) of 25 years, and replace with similar assets at the end of the useful life.
- Appropriate new aircraft can be obtained at a price of \$12.5 million. Although this is more than 3½ times the cost of the comparable second-hand aircraft, advances in design and fuel-efficiency of newer aircraft would result in the annual operating and maintenance costs being about half the level estimated for the second-hand aircraft.
- Under the relevant tax legislation, Vaportrail Inc will be entitled to claim bonus depreciation of 50% of the purchase cost of new aircraft in the first year after purchase. The rest of the value would be depreciated on straight line basis over the life of the asset, starting from the first year after purchase.
- It is estimated that the residual value of new aircraft on the second-hand market when they are replaced after 25 years would be approximately 20 percent of the price that Vaportrail Inc paid for them.

Revenues would be the same under either of the two strategies. All the above figures are before tax, and at current prices. The company pays corporation tax at the rate of 34%, in the year in which the tax liability is incurred. Tax would have to be paid on the resale value realised in respect of any equipment that has been fully depreciated for tax purposes. Although the current inflation rate of 1.5% per annum is expected to continue for the foreseeable future, the cost and benefit figures to be used for evaluating this decision are not proposed to be inflated as it would complicate the appraisal.

Vaportrail Inc will be using the following three types of finance, in the ratio of 0.5 : 0.2 : 1

- 6.5% secured borrowings
- 7% mezzanine finance
- ordinary share capital

The mezzanine finance will carry equity kickers and non-equity kickers, the details of which are still under negotiation. The providers of the mezzanine finance would have a second floating charge over the company's assets.

Other Information:

- the industry average ratio of debt to equity is 0.5:1
- the industry average beta is 1.09
- the rate of return on the market is currently estimated at 8% annual effective
- the yield on short-dated treasury bills is currently around 0.5%

Required:

- (a) Calculate the weighted average cost of capital of Vaportrail Inc. (7 marks)
- (b) Explain the potential problem in evaluating a project without increasing the cash flows at the rate of inflation, and calculate the discount rate that would be appropriate for dealing with such un-inflated cash flows. (3 marks)
- (c) Based on the information provided:
- i) Schedule the relevant real after-tax cash flows of each of the two alternatives. (15 marks)
 - ii) Evaluate appropriately and recommend which of the two alternative strategies Vaportrail Inc should choose. (7 marks)
- (d) Explain the meaning of mezzanine finance, describing the circumstances in which it is commonly used. (2 marks)
- (e) Explain the meaning and purpose of equity kickers and non-equity kickers. Give an example of each and comment on the main problems that may be faced by companies that provide these. (4 marks)
- (f) Explain the difference between a fixed and a floating charge. In what circumstances would a floating charge become a fixed charge? (2 marks)

(Total 40 marks)

SECTION B – Answer THREE questions out of four

QUESTION 2

Quelch plc, a company engaged in oil and gas transportation, has 150 million shares in issue, which are currently trading at a market price of 800 pence each. The company is considering the takeover of Bunter plc, a pipeline manufacturer. Bunter plc has 100 million shares in issue, trading at a market price of 420 pence each.

Bunter plc's net cash flow after tax in the year just ended was £60 million. Quelch plc expects that managerial and other synergies arising out of the takeover would result in Bunter plc's net cash flow after tax increasing by 6% per year in the first 3 years after takeover, and thereafter by an average rate of 3% per year for the foreseeable future.

The merger will involve transaction costs of £2.25 million, including the fees of the advisers appointed by Quelch plc to plan the acquisition and provide advice on post-merger integration.

The appropriate discount rate for evaluating the cash flows of Bunter plc for acquisition is estimated at 9.7%.

Required:

- (a) Using the information provided, estimate the post-acquisition value of Bunter plc. Comment on the size of the total value gain that is expected to arise as a result of the takeover.

(6 marks)

- (b) Provide appropriate calculations to show how this total value gain would be distributed between the shareholders of Quelch plc and Bunter plc respectively under each of the following alternatives.

Comment on which might be preferable from the perspective of Quelch plc's shareholders:

- (i) Quelch plc paid 500 pence cash for each of Bunter plc's shares.
- (ii) Quelch plc offered Bunter plc's shareholders one Quelch share in exchange for every two Bunter shares surrendered by them.

(8 marks)

- (c) Explain the differences between the three broad approaches to post-merger integration (i.e. the absorption, preservation and symbiosis approaches). Comment on which of these may be appropriate in the circumstances of the case.

(6 marks)

(Total 20 marks)

QUESTION 3

The balance sheet of Val-U plc for the year just ended is summarised below:

(£ millions)

ASSETS	
Cash & Bank Balances	380
Other Current Assets	1,340
<i>Total Current Assets</i>	<i>1,720</i>
Fixed & Non-Current Assets	1,960
Total Assets	3,680
LIABILITIES & EQUITY	
Liabilities	
Current Liabilities	1,290
Unsecured 6% bonds	70
<i>Total Liabilities</i>	<i>1,360</i>
Equity	
- Ordinary Shares (50 pence par value)	800
- Retained Earnings	1,520
<i>Total Equity</i>	<i>2,320</i>
Total Liabilities & Equity	3,680

The company, which has been earning good profits, has been paying a dividend of 20 pence per share on its ordinary share capital in each of the last few years. The same rate of dividend has already been announced for the year just ended. The company's ordinary shares are now trading at a market price of 650 pence.

At a meeting of Val-U plc's board, the company's Chairman suggests that, in addition to the normal dividend of 20 pence per share, the shareholders should be rewarded with an additional one-off special dividend exactly equal to the normal dividend.

The Chief Financial Officer (CFO) suggests that, instead of a special dividend, the company should make a 1 for 4 bonus issue (i.e. scrip issue). The CFO says that maintaining the same dividend rate on the increased share capital would provide better long term rewards for the shareholders and would have a more favourable impact on the share price.

The Company Secretary argues that the issue of additional shares would depress the EPS and have an adverse effect on the share price. In the Company Secretary's view the company should repurchase 3% of the shares at a premium of 10% to the market price. The Company Secretary says that the receipt of a substantial premium over the market price of their shares, and the increased EPS resulting from reduction in the overall number of shares, would create the best value for shareholders.

A Non Executive Director points out that the firm's major shareholders are sophisticated investors like investment trusts and ICVCs and, given investor rationality in an efficient market, none of the three proposals would make any difference to shareholder value.

Required:

- (a) With reference to the Non Executive Director's remark, evaluate the theoretical impact of each of three proposals - i.e. the special dividend, the bonus issue and the share repurchase - on the wealth of a shareholder in Val-U plc currently owning 1,000 shares. Provide appropriate calculations, and comment on your results.

(8 marks)

- (b) Discuss the suggestions and the views expressed by the Chairman, the CFO and the Company Secretary, and comment on the ways in which each of their suggested measures may, in practice, create additional value for shareholders.

(7 marks)

- (c) Explain the difference between "investment trust" and "ICVC", outlining the principal differences between the two types of institution and how they operate.

(5 marks)

(Total 20 marks)

QUESTION 4

The balance sheet of Binders plc for the year just ended is summarised below:

(£ millions)

ASSETS	
Cash & Bank Balances	4
Other Current Assets	173
<i>Total Current Assets</i>	<i>177</i>
Fixed Assets	354
Other non-current assets	27
<i>Total Non-Current Assets</i>	<i>381</i>
Total Assets	558
LIABILITIES & EQUITY	
Liabilities	
Bank Overdraft	4
Other Current Liabilities	125
<i>Total Current Liabilities</i>	<i>129</i>
Bank term loans	96
<i>Total Liabilities</i>	<i>225</i>
Equity	
- Ordinary Shares	90
- Retained Earnings	243
<i>Total Equity</i>	<i>333</i>
Total Liabilities & Equity	558

The Directors of Binders plc wish to make the following payments:

- Acquisition of fixed assets, including a new headquarters building and various items of replacement machinery, at a total cost of £29 million.
- Repayment instalments on the bank term loans, amounting to £30 million.
- Payment of an annual dividend of £27 million.

Binders plc had no profits in the year just ended. The company, which currently has a temporary overdraft with one of its bankers, has approached the bank for a formal overdraft facility of £90 million to enable it to make the above payments. The bank has asked the company to give appropriate representations in its application for the facility.

As the bank overdraft is a loan that is repayable on demand, it is treated both as a current liability and as debt for the purpose of computation of relevant financial ratios.

Binders plc's CEO is concerned about the potential impact of the company's plans on key financial indicators that may affect its ability to comply with various financial covenants (both maintenance covenants and incurrence covenants) stipulated by the lenders.

Required:

- (a) Based on the information provided, identify two key balance sheet ratios and one other balance sheet measure that are used in financial covenants, that are likely to be of particular concern to Binders plc's CEO. Calculate these before and after the proposed course of action, and explain the main reasons for lenders imposing such covenants.**

(9 marks)

- (b) Explain what is meant by the term "representations" in the above context, outlining why they are required and what areas they might cover. Discuss two particular areas of concern for borrowers with regard to representations.**

(6 marks)

- (c) Explain the difference between maintenance covenants and incurrence covenants. When negotiating financial covenants, what are the important factors that should be considered to help ensure that monitoring and testing such covenants for compliance will not be a problem?**

(5 marks)

(Total 20 marks)

QUESTION 5

Southee Limited, a UK construction company, is planning to acquire new earthmoving equipment at a cost of £10 million, and is considering the following alternative sources of finance:

- (i) A bank loan for the full cost of the equipment, repayable over four years in equal annual instalments incorporating interest at a rate of 5% per annum, the first instalment to be paid one year from the date of taking out the loan.
- (ii) A finance lease with a monthly lease rental of £223,000. The first rental is payable in advance, followed by further monthly rental payments for the next four years.

The equipment would have no residual value at the end of the period of four years.

The Company Secretary has a friend visiting from overseas, who has advised that it would be preferable to lease the equipment rather than buy it. The friend's argument is that leasing would avoid Southee's own capital being locked up, since it would be the lessor who would buy and own the equipment. Southee Limited is highly geared, and the friend has also suggested that leasing the equipment instead of borrowing to buy it would make Southee Limited's balance sheet look better. As an example of the convenience of leasing, the friend points to the rental car they have been using while visiting the UK.

Required:

- (a) Calculate the annual instalment that would be payable under the bank loan. Also calculate how much would represent the principal repayment, and how much would represent interest charges, in each of the four years and in total.**

(5 marks)

- (b) What is the before-tax rate of return to the lessor implied by the terms of the proposed lease agreement, and how does it compare with the rate of interest on the bank loan?**

(4 marks)

- (c) Discuss the soundness/relevance of the advice offered by the Company Secretary's friend.**

(4 marks)

- (d) Discuss the possible advantages to a company like Southee Limited of leasing the equipment rather than acquiring it with a bank loan.**

(7 marks)

(Total 20 marks)

FORMULAE

1. Annuity factor

$$\text{Annuity Factor}_{r\%, n \text{ periods}} = \frac{1}{r} \times \left[1 - \frac{1}{(1+r)^n} \right]$$

2. CAPM formula

$$r_j = k_E = r_f + \beta \times (r_m - r_f)$$

3. CAPM formula

$$\beta_j = \frac{\text{Covariance of security with the market}}{\text{Variance of the market}}$$

or

$$\beta_j = \text{correlation of security with the market} \times \frac{\text{standard deviation of security}}{\text{standard deviation of market}}$$

4. Ungearing betas

$$\beta_a = \beta_e \frac{E}{E+D(1-T_c)} + \beta_d \frac{D(1-T_c)}{E+D(1-T_c)}$$

5. Modigliani & Miller with tax (1963)

$$WACC_G = k_{EU} \times \left(1 - \frac{D \times T_c}{E + D} \right)$$

6. Share valuation for a firm with normal or constant growth (Gordon growth model)

$$P_0 = \frac{d_1}{[k_E - g]}$$

CORPORATE FINANCE & FUNDING April 2014

SUGGESTED SOLUTIONS

Question 1

- (a) The industry average beta and debt/equity ratio are given as 1.09 and 0.5:1 respectively.

$$\text{The ungeared beta } (\beta_A) = 1.09 \times \frac{1}{1 + 0.5(1 - 0.34)} = 0.82$$

Vaportrail uses secured borrowings, mezzanine finance and equity in the ratio 0.5:0.2:1. The ratio of debt to equity is therefore 0.7:1.

$$\text{The regear beta } (\beta_E) = 0.82 \times \frac{1 + 0.7(1 - 0.34)}{1} = 1.20$$

Using CAPM, $k_E = 0.5 + (8 - 0.5)1.20 = 9.5\%$

After-tax cost of secured borrowings = $6.5 \times (1 - 0.34) = 4.29\%$

After-tax cost of mezzanine finance = $7 \times (1 - 0.34) = 4.62\%$

Weighted average cost of capital (WACC)

$$WACC = \left[9.5 \times \frac{1}{1.7} \right] + \left[4.29 \times \frac{0.5}{1.7} \right] + \left[4.62 \times \frac{0.2}{1.7} \right] = 7.39\%$$

In the absence of any other information it is assumed that the whole of the cost of the mezzanine finance is tax-relieved. Strictly, any equity component of the total cost would not be tax-relieved. Full credit given to candidates applying a different tax treatment if they evidence awareness of what they are doing and do it correctly.

- (b) The weighted average cost of capital is based on market rates of return, which include the market's expectations with regard to future inflation – i.e. it is a nominal or money rate. If this market rate of return is used as the discount rate for a discounted cash flow analysis where the cash flows are expressed at current prices (i.e. without including inflation), the present value of the cash flows would be understated.

Alternatively, the un-inflated (i.e. real) cash flows could be discounted at a real rate, by removing inflation from the discount rate – but this procedure would work accurately only if *all* cash flows increase at the same rate of inflation, which is not usually the case. Capital allowances (which influence tax cash flows) are independent of inflation. Also, all cash flows may not be affected in the same way – for example, the wage inflation rate may be different from the price inflation rate, or the particular inputs (such as aviation fuel in this case) may be subject to changes that are different from the general inflation rate.

Since un-inflated cash flows are proposed to be used in this case, the money WACC has to be converted to a real WACC.

$$(1 + r_{\text{Real}}) \times (1 + r_{\text{Inflation}}) = 1 + r_{\text{Money}} \quad 1 + r_{\text{Money}} \quad 1.0739$$

$$\therefore 1 + r_{\text{Real}} = \frac{1.0739}{1.015} = 1.058$$

$$1 + r_{\text{Inflation}} \quad 1.015$$

$$\therefore \text{the real WACC is } 1.058 - 1 = 5.8\%$$

(c) Strategy 1 - Used aircraft: Tax Depreciation = \$3.5m ÷ 7 = \$0.5m per year.

Relevant real cash flows (\$ 000's):

<i>Inflow/outflow</i>	<i>Year 0</i>	<i>Years 1-6 (per year)</i>	<i>Year 7</i>
Purchase cost	-3,500		
Operating/maintenance costs		-2,000	-2,000
Depreciation tax shield		170	170
Tax shield on op/maint costs		680	680
Residual value			1,050
Tax on residual value			-357
Cash flow	-3,500	-1,150	-457

Strategy 2 - New aircraft: Depreciation = \$12.5m x 50% = \$6.25m bonus depreciation in year 1. In addition, (12.5 – 6.25)/25 = \$0.25m per year from years 1-25.

[Note: Year 1 depreciation = 6.25m bonus + 0.25m straight line = \$6.5m]

Relevant real cash flows (\$ 000's):

<i>Inflow/outflow</i>	<i>Year 0</i>	<i>Year 1</i>	<i>Years 2-24 (per year)</i>	<i>Year 25</i>
Purchase cost	-12,500			
Operating/maintenance costs		-1,000	-1,000	-1,000
Depreciation tax shield		2210	85	85
Tax shield on op/maint costs		340	340	340
Residual value				2,500
Tax on residual value				-850
Cash flow	-12,500	1,550	-575	1,075

Strategy 1 evaluation:

$$PVIFA_{5.8\%,6} = \frac{1 - 1.058^{-6}}{0.058} = 4.9484$$

$$PV \text{ of costs} = -3500 - (1150 \times 4.9484) - (457/1.058^7) = -3500 - 5690.63 - 307.98$$

$$= -9,498.61.$$

$$PVIFA_{5.8\%,7} = \frac{1 - 1.058^{-7}}{0.058} = 5.6223$$

∴ Annual Equivalent Annuity (AEA) of Strategy 1:

$$\frac{-9498.61}{5.6223} = -\$1,689,453$$

Strategy 2 evaluation:

$$PVIFA_{5.8\%,23} = \frac{1 - 1.058^{-23}}{0.058} = 12.5272$$

$$\begin{aligned} PV \text{ of costs} &= -12500 + \{[1550 + (-575 \times 12.5272)]/1.058^1\} + (1075/1.058^{25}) \\ &= -12500 - 5343.23 + 262.58 = -17,580.65. \end{aligned}$$

$$PVIFA_{5.8\%,25} = \frac{1 - 1.058^{-25}}{0.058} = 13.0299$$

∴ Annual Equivalent Annuity (AEA) of Strategy 2:

$$\frac{-17580.65}{13.0299} = -\$1,349,250$$

The annual equivalent cost of the new aircraft would be \$340,203 lower than the used aircraft - Strategy 2 would therefore more cost-effective than Strategy 1.

- (d) Mezzanine finance is a specialist form of subordinated debt, i.e. a layer of finance that ranks between senior debt and equity capital. Such financing makes it possible for companies to raise debt finance even after senior borrowing capacity has been exhausted due to excessive gearing or non-availability of unencumbered assets to offer as security; it is frequently used in private equity financing structures and in acquisition financing, particularly leveraged buyouts.
- (e) Mezzanine finance is generally regarded as quasi-equity, resulting in it carrying a much higher expected rate of return than other types of subordinated debt. As in the case of convertible bonds, it is often considered necessary to offer the providers of mezzanine finance 'sweeteners' to reduce the interest cost – these may take the form of an equity kicker in the form of a share option or a non-equity kicker such as a redemption premium. The main problems with such sweeteners:
 - Share options would dilute equity if exercised, and may greatly increase the effective return to the financiers (at the cost of the shareholders) if the share price were to rise significantly by the exercise date.
 - A redemption premium would similarly add to the effective borrowing cost.
- (f) A fixed charge is over one or more specific assets of the borrower. A floating charge is a general charge taken over a whole category of assets (such as stocks or debtors), or over the entire business undertaking of the borrower – the assets held within the category may be freely disposed of by the borrower, and any new assets of the same category would automatically become subject to the floating charge. In the case of Vaportrail Inc the main valuable assets would be aircraft, each of which is likely to be subject to a specific fixed charge. Assets such as aviation fuel, on the other hand, would be subject to a floating charge. A floating charge crystallizes into a fixed charge over all the assets in the category when the borrower defaults.

Question 2

(a) Cash flow in year just completed = £60m

Growth rate for first 3 years = 6% per year.

Growth rate from Year 4 onwards = 3%

£ millions

	Year 1	Year 2	Year 3	Year 4
After tax cash flow	63.6	67.4	71.5	73.6

The PV (at Year 3) of the future cash flow from Year 4 onwards would be:

$$\frac{73.6}{0.097 - 0.03} = £1098.5m$$

DCF Valuation:

$$\frac{63.6}{1.097^1} + \frac{67.4}{1.097^2} + \frac{71.5}{1.097^3} + \frac{1098.5}{1.097^3} = £1000.25m$$

Comment on value gain:

	£m
Post-acquisition market value of Bunter	1000.25
Less: Transaction costs	(2.25)
Net post-acquisition value of Bunter	998.00
Less: Existing market value of Bunter = 100m shares x £4.20	(420.00)
Estimated value gain arising as a result of the takeover	578.00

This is a very large value gain, more than doubling the current market capitalisation of Bunter plc. It may be worthwhile for Quelch plc to review whether it is (i) over-estimating the value of the synergies and/or (ii) underestimating the business risk and the appropriate discount rate for evaluation.

(b) If £5 is paid in cash for each Bunter share, the amount paid would be:

$$100m \text{ shares} \times £5 = £500m$$

The existing market value of Bunter is £420m

$$\therefore \text{Bunter's shareholders will gain } £500m - £420m = £80m$$

Quelch's shareholders will receive the rest of the value gain, i.e.:

$$£578m - £80m = £498m$$

[Alternatively: they will become owners of a company worth a net amount of £998m by paying £500m – their net gain will be £498m].

If 1 Quelch share is given for 2 Bunter shares, 50 million new Quelch shares will be issued & the total number of shares after the takeover will be 150m + 50m = 200m.

$$\text{The pre-takeover value of Quelch} = 150m \times £8 = £1200m$$

$$\text{The combined value of the two firms after the takeover would be } 1200 + 998 = £2198m$$

$$\text{The post-acquisition share price would be } £2198m \div 200m = £10.99$$

$$\begin{aligned} \therefore \text{Quelch's shareholders will gain } (10.99 - 8) \times 150m &= £ 448.5m \\ \text{Bunter's shareholders will gain } (50m \times £10.99) - £420m &= £ 129.5m \\ &£578.0m \end{aligned}$$

Cash purchase would seem to be preferable for Quelch plc's shareholders, by about £50m. It would also be less easy for the target to defend, and would avoid dilution of ownership and future value gains. However, the impact of such a large cash payment on Quelch plc's liquidity will need to be carefully considered.

- (c) Absorption approach: Target's employees, culture, systems and operating procedures are consolidated with the acquirer's. Used when acquirers are seeking economies of scale, scope or learning.

Preservation (or holding company or portfolio) approach: The post-merger operating businesses operate largely independently – the degree of integration does not stretch beyond changes in financial control and reporting procedures and transfer of some managerial skills. Usually used in conglomerate mergers.

Symbiosis approach: Unique cultures, organization and operating styles are separate and each unit operates with a high degree of autonomy – but interaction is encouraged to allow cross-fertilisation of ideas and transfer of skills. This approach is particularly useful in related mergers, where there is potential for close collaboration on projects and for transfers of skills.

As the industries concerned are oil and gas transportation and pipeline manufacture, either the absorption approach (to seek economies of scale through vertical integration) or the symbiosis approach (used in related mergers) may be most appropriate in this case.

Question 3

- (a) For a shareholder holding 1000 shares the value of holding = $1000 \times £6.50 = £6,500$.

Normal dividend paid by the company = $£0.20 \times 1600 = £320m$

Additional special dividend = normal dividend = $£320m$

- (i) Special dividend:

Current market capitalization 1600m shares x £6.50=	10,400m
Special dividend paid out	= 320m
New market capitalization	= 10,080m
Ex-dividend share price $£10,080m \div 1600m$	= £6.30
	£
Special dividend paid to shareholder $(£320m/1600m) \times 1000$	= 200
New value of the shareholding $1000 \times £6.30$	= 6,300
Total value (unchanged)	= 6,500

- (ii) Bonus Issue:

With a 1 for 4 bonus issue, no cash would leave the company, and the market capitalization would remain unchanged at £10,400m. Instead of cash, the shareholders would receive $1600/4 = 400m$ new shares, taking the number of shares to 2000m.

The share price would come down to $£10400m \div 2000m = £5.20$

The shareholder would receive $1000/4 = 250$ new shares.

Value of the shareholder's holding would be:

$$1250 \times £5.20 = £6,500 \text{ (unchanged)}$$

(iii) Share Buyback

Repurchase of 3% of the ordinary share capital means buyback of $0.03 \times 1600\text{m} = 48\text{m}$ shares. This would be at a premium of 10% to the market price, i.e. $\text{£}6.50 \times 1.10 = \text{£}7.15$. The amount that would be paid out for the share repurchase would be $48\text{m} \times \text{£}7.15 = \text{£}343.2\text{m}$. There would be $1600\text{m} - 48\text{m} = 1552\text{m}$ shares left in the company.

Current market capitalization $1600\text{m shares} \times \text{£}6.50$	=	10,400.00m
Cash leaving company for share buyback	=	343.20m
New market capitalization	=	10,056.80m
Ex-buyback share price $\text{£}10056.80\text{m} \div 1552\text{m}$	=	£6.48

	£
Cash received by shareholder $(0.03 \times 1000) \times \text{£}7.15$	= 214.50
New value of the shareholding $970 \times \text{£}6.48$	= 6,285.60
Total value (unchanged)	= 6,500.10

As the Non-Executive Director has suggested, theoretically the shareholder would indeed be unaffected, whichever of the three proposals the company chooses. But the actual share price in each case would depend on how the market perceives the company's announcement and actions. Depending on the market reaction, the actual share price will vary from the theoretical figures calculated above, causing the shareholder's holding to either gain or lose in value.

(b) Discussion should bring out these points:

- If the company has a lack of positive-NPV investment opportunities, it could create shareholder value by returning idle cash to the shareholders for investing at higher return elsewhere – both the special dividend and the share buyback would achieve this.
- Compared to a special dividend, a share buyback has the advantage that it avoids the possibility of shareholders starting to expect higher dividend payouts in future years as well.
- Share buyback would also be preferred by investors in a high income tax bracket, who may benefit by receiving returns in the form of capital gains rather than a cash dividend.
- Since the bonus issue will increase the ordinary share capital from £800m to £1000m, maintaining the existing rate of dividend (as a percentage of the ordinary share capital) would increase the annual dividend payout from £320m to £400m. Over the next four years the extra dividend received by shareholders would be £320m (i.e. the same amount that would be returned to shareholders immediately under the special dividend), but with a smaller immediate impact on liquidity. The prospect of a long-term increase in dividend payout may have a positive signaling effect which may, as the CFO suggests, have a more favourable impact on the share price.
- If investment opportunities do arise in future, new capital could be raised in the form of debt. Gearing seems to be very low at present, and the replacement of equity with debt (within limits) could create shareholder value. Returning equity to the shareholders (through either the special dividend or the share buyback) would facilitate this sort of capital restructuring.
- Share buyback would result in a reduction in the number of shares, which may result in a higher EPS figure – arguably, this may have a beneficial impact in *imperfect* markets, where investor irrationality may result in share price increase simply in response to an increase in published EPS. Rational investors should recognize that the increase in EPS is simply due to the same earnings being divided by a smaller number of shares - i.e. it does not represent any real value creation. [Similarly, even though a bonus issue

would result in a lower EPS, the reduction in EPS would not by itself drive down the share price in a rational market].

- The argument that buying back shares at a premium to the market price would create better value for shareholders is also flawed – just as the size of discount in a rights issue does not by itself have any impact on shareholder value, the size of premium in a share buyback should have no impact either. However, if there is a signaling effect that the company's management considers the share to be underpriced in the market, that may result in upward pressure on the share price.

(c) These are types of mutual fund, the main distinguishing characteristics being:

Investment Trust	ICVC (Investment Company with Variable Capital)
Company incorporated under Companies Act.	A special type of company, incorporated under the Treasury's Open Ended Investment Companies (Investment Companies with Variable Capital) Regulations.
Shares are bought or sold in the stock exchange, at the prevailing market price.	Units are bought or sold by the ICVC at a single price (rather than a dual bid-offer price as in the case of a unit trust) – instead there tends to be a larger up-front charge.
Closed ended – investible capital does not continually fluctuate.	ICVCs are open-ended funds. But they are umbrella funds – investors can switch between various sub-funds without incurring capital gains tax.
Value of shares depends on both NAV of investments, and share market forces – can be higher or lower than NAV.	The value of units is in line with the net asset value of the investments.
Can create value for equity shareholders by gearing up - which increases risk.	Borrowing is very limited.

Question 4

(a) Payment of a dividend of £27 million would result in reducing the tangible net worth, thereby adversely affecting the ability to comply with a "minimum tangible net worth" covenant. Reduction in tangible net worth is an early warning sign of deterioration in performance. The minimum tangible net worth covenant imposes financial discipline on the company's management and inhibits the company from making – or increasing – dividend payments when the profitability is declining.

The overdraft would increase by $29 + 30 + 27 = £86\text{m}$. Increasing the current liabilities through the overdraft, and using the amount drawn to acquire non-current assets and repay term loans would result in decline in the current ratio, which would adversely affect the ability to comply with a "minimum current ratio" covenant. Decline in current ratio is an indication of liquidity and cash constraints that may lead to failure of the company. The minimum current ratio is intended to discourage the company from compromising its liquidity through overtrading or through the use of short-term finance for long-term investment.

Increasing the debt (i.e. overdraft) from £4m to £90m would also adversely affect the ability to comply with a leverage or “maximum debt equity ratio” covenant. The ceiling on debt equity ratio places a restriction on the amount of debt that can be raised against a given level of net worth, and is intended to limit total borrowings. It is aimed at preventing the company from overextending itself, thereby jeopardizing the safety of the bank’s advance.

Financial Ratio	Before	After
Tangible Net Worth	£333 million	£333m - £27m = £306m
Current Ratio	$177/129 = 1.37$	$177/(129 + 86) = 0.82$
Debt/Equity Ratio	$(4+96)/333 = 30\%$	$(90+66)/(333-27) = 51\%$

Give credit for descriptions and explanations of alternative relevant financial covenants, with relevant correct calculations of related financial ratios.

(b) Representations are the lender’s evidence that the circumstances which convince them to lend are valid. Since it is not practicable for a bank to make a detailed investigation of a company’s internal affairs, loan documentation includes assurances and representations from the borrowing company on various matters – any breach of these representations would normally be categorised as a default and could have serious consequences for the company.

Areas that might be covered:

- The borrowing does not result in any breach of covenant under existing loan agreements or financial transactions – this may be particularly relevant given the size of the proposed overdraft facility in relation to the existing borrowings.
- Borrower is duly incorporated and legally in existence, and has the power to borrow and perform its obligations under the loan agreement, and necessary actions have been taken to authorise the borrowing.
- The borrowing does not contravene any provisions in the Memorandum and Articles of Association, or any other laws or regulations.
- The borrower is not aware of any legal actions or arbitration proceedings that could have a materially adverse effect on its business, its financial condition, or its ability to perform its obligations under the agreement.
- Pari passu ranking of loans with other secured debt.
- Audited accounts provided to the bank have been properly prepared in accordance with generally accepted accounting principles, showing a true and fair view, etc.
- No material adverse change since date of accounts.
- Compliance with environmental laws and regulations.

Two main areas of concern:

- Materiality should be clearly defined, particularly when making representations such as “there is nothing that could have a materially adverse effect on the business” or “there is no actual or potential litigation against the company”.
- Repetition: since representations are deemed to be repeated on each subsequent drawing, rollover or payment date, it is necessary to keep abreast of changes in laws and regulations and maintain a file with up-to-date details of commercial and other matters that may need disclosure.

(c) Maintenance covenants must be met at regular intervals.

Incurrence covenants have to be met at the time of taking the loan and also on certain trigger events such as raising new borrowings, acquisitions, etc.

Ensure clear definition: definition of borrowings for covenant reporting purposes may be different to that for financial reporting purposes. E.g.: what kinds of debt will be included for the debt/equity ratio – will all short-term liabilities be included? Will cash in hand and at bank be deducted?

Provide for changes in accounting practice: 'Frozen GAAP' condition is desirable – only those accounting standards in operation at the time that the loan was signed should be used when calculating the financial covenants.

Allow room for exchange rate fluctuation: International companies should try to ensure that there is sufficient flexibility to allow for translation risk arising due to exchange rate fluctuation.

Suggest rolling rather than spot test: Where company's financial performance fluctuates from one year to another, it may be an important protection to seek a rolling test of the covenant – say, using the average of the most recent two years' figures.

Question 5

(a) $PV = \text{Equated Annual Instalment} \times PVIFA_{5\%,4}$

$$PVIFA_{5\%,4} = \frac{1 - 1.05^{-4}}{0.05} = 3.5460$$

$R = 10m \div 3.5460 = \text{£}2.82m$ approx.

Annual loan payment required: £2.82m

Break-up of interest and principal payments (£ millions):

Year	Opening Balance of Loan	Interest at 5%	Principal Repayment
1	10.000	0.500	2.320
2	7.680	0.384	2.436
3	5.244	0.262	2.558
4	2.686	0.134	2.686
Total		1.280	10.000

(b) The before-tax cash flows for the lessor will be as under:

Month	0	1-48
Cost of equipment	(10.000)	
Lease rental	0.223	0.223 per month
Total cash flow	(9.777)	0.223 per month

The rate of return earned by the lessor is the IRR of these cash flows.
Try 4.8% (i.e. 0.4% per month):

$$\text{Monthly PVIFA}_{0.4\%,48} = \frac{1 - 1.004^{-48}}{0.004} = 43.5942$$

$$\text{NPV} = (0.223 \times 43.5942) - 9.777 = 9.7215 - 9.777 = -0.0555\text{m}$$

This is negative, so try a lower rate, say 4.2% (i.e. 0.35% per month):

$$\text{Monthly PVIFA}_{0.35\%,48} = \frac{1 - 1.0035^{-48}}{0.0035} = 44.1138$$

$$\text{NPV} = (0.223 \times 44.1138) - 9.777 = 9.8374 - 9.777 = 0.0604\text{m}$$

Using interpolation, monthly IRR = $[(0.0604 \div 0.1159) \times 0.05] + 0.35 =$ approximately

0.376% before tax.

This is the periodic rate of return per month. The effective annual rate would be:
 $1.00376^{12} - 1 = 4.6\%$.

This is lower than the rate of interest on the bank loan.

(c) The following points are relevant:

- The friend's view that leasing will not lock up Southee's own capital is not an advantage which relates only to leasing; any form of finance, including the bank loan, would free up Southee's own capital. Leasing does not preserve or conserve a firm's capital any more than borrowing does.
- UK accounting standards require all finance leases to be capitalised, and the present value of lease rentals payable shown as a liability. Hence, the remark that "leasing would make your balance sheet look better" is not relevant for Southee in the UK.
- The rental car is not an appropriate example to use, as it is an example of an operating lease rather than a finance lease.

(d) Advantages of leasing - the essential points are:-

- Because the lessor retains legal title to the assets, credit assessment is usually less rigorous than for a bank loan. Access to finance is relatively easy and quick, and lease finance is often available when other forms of finance are not.
- For the same reason lease finance generally carries fewer covenants and restrictions than other forms of finance like loans and debentures.
- Specialist leasing companies may gain economies of scale in asset purchases, and pass on some of the cost savings to lessees through competitive lease rental terms.
- Lease finance can be flexibly structured, with the rentals front-ended or back-ended as desired.
- Although not so in the case of Southee Limited, finance leases often require smaller down payments than other forms of finance.
- Techniques like sale and leaseback can generate liquidity for cash-strapped firms.

- The most important advantage is that, because (for example) the lessor may gain the benefit of capital allowances or their equivalent, differences in the tax-paying status of lessor and lessee can create comparative advantages that offer scope for *tax trading*. Scope for such tax trading also arises particularly when the lessee is tax-exhausted or non-tax-paying. The time lag between when taxes are incurred and when they are actually paid can also have an advantageous impact. The benefits gained through tax trading can result in leasing having a significant cost advantage when compared to borrowing and buying an asset.

Corporate Finance and Funding

Examiners Report April 2014 Exam

There were 95 scripts, of which 47 received a pass mark, giving an overall pass rate of 49.5%. This is significantly lower than the previous diet's pass rate of 58%, but similar to the pass rate of 49% in April 2013.

Question 1 (Compulsory)

The compulsory question required candidates to evaluate a capital investment decision which involved choosing between assets with differing replacement cycles. The performance on this question was generally satisfactory, and it had the highest pass rate. Cost of capital calculations were generally competently performed, except by those candidates who were unable to deal with ungearing/re gearing of betas. Candidates showed understanding of the impact of inflation in investment appraisal, but errors tended to be made when dealing with depreciation and taxation. Some candidates took depreciation as a cash flow – some others correctly excluded depreciation, but also (incorrectly) ignored the tax shield on the relevant US tax depreciation. The tax shield on operating and maintenance costs also tended to be ignored.

Question 2

This was the most popular of the non-compulsory questions and it also had a satisfactory pass rate. The question required evaluation of the value gain arising out of a takeover, and how the value gain would be shared between the shareholders of the acquiring and acquired firms under differing payment terms for the acquisition. The majority of candidates were able to competently use the growing perpetuity model for firm valuation. Evaluation of how the value gain would be shared under a cash payment was also well handled by most candidates.

Candidates tended to cope less well when the payment terms were a share-for-share exchange rather than cash. A common mistake was to assume that the shares issued to shareholders of the acquired firm in payment for the takeover would be valued at the pre-takeover market price of the acquiring company's shares – the value of the shares ought to have properly been calculated by dividing the combined post-takeover value of the two firms by the new number of shares.

Question 3

This question required evaluation of the theoretical impact of a special dividend, a bonus issue and a share repurchase on shareholder wealth. Candidates tended to have less difficulty in performing the required calculations in respect of the special dividend and bonus issue than they did with those required for the share repurchase. It is possible that some candidates thought (wrongly) that there *ought* to be a theoretical impact on shareholder value given the information in the question that the share repurchase was to be a premium to the market price.

Candidates were generally quite limited in their discussion of the ways in which these measures may, in practice, create additional value for shareholders. Comments about factors such as signaling effects should not be vague, but accompanied by clear explanations of what exactly is being referred to, why the phenomenon occurs, and whether the impact on the share price is likely to be favourable or unfavourable.

The last part of the question, asking for description of the differences between investment trusts and ICVCs was reasonably well answered by most candidates.

Question 4

This question on covenants was the least popular of the non-compulsory questions, and the pass rate was also the lowest.

Candidates were provided the summarized balance sheet of a firm and required to identify three financial covenants that might be in danger of being breached by certain actions that the firm was planning, such as drawing from an overdraft account for acquisition of fixed assets, repayment of term loans, or payment of a dividend from reserves.

Several candidates not only struggled to identify three relevant financial covenants, but also made elementary mistakes in calculating the likely impact of the company's plans on its ability to comply with such covenants.

The second part of the question, about representations in the context of loan documentation, was poorly answered by many candidates, who showed very limited understanding of the topic.

The final part of the question required discussion of the important factors to be considered to help ensure that *monitoring and testing the covenants for compliance would not be a problem*. Candidates were expected to specifically address this aspect, but many adopted the 'kitchen sink' approach in their answers, providing comments on matters that had little relevance to what the question was asking.

Question 5

The final question, requiring calculation of the equated annual repayment instalment on a loan and the internal rate of return to the lessor on a leasing transaction, was also unpopular and also had a low pass rate. Several candidates could not calculate the equated annual repayment instalment incorporating principal and interest payments, and many continue to have difficulty calculating the yield to maturity and effective annual cost of financing when coupons/repayment instalments are monthly rather than annual.

A general weakness was also observed in the ability of candidates to recognize and explain the true advantages of a finance lease as compared to borrowing and buying the asset.