FINANCIAL MANAGEMENT

ANSWERS

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1 Goldstone Victoria plc

Marking guide

		Marks
1.1	Tax on capital allowances	4
	Rent	1
	Equipment	1
	Sales	1
	Variable costs	1
	Fixed costs	3
	Tax on extra profit	2
	Working capital	2
	NPV calculation and discount factors	2
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1.2 (a)	PV generated from contribution	2
	Breakeven level of annual sales	2
	Sensitivity comment	1
(b)	Sensitivity of sales proceeds	4
	Comment on sensitivity	1
(c)	Sensitivity of rent	2
	Comment on sensitivity	1
Maximum		**12**
1.3	1 mark per relevant point	**6**
		35

1.1

	30 Sep 16 t_0 £'000	30 Sep 17 t_1 £'000	30 Sep 18 t_2 £'000	30 Sep 19 t_3 £'000	Marks
Equipment	(1,200.000)			620.000	**1 mark**
Tax on Cap. Allowances (W1)	45.360	37.195	30.500	8.745	
Sales (W2)			3,520.000	3,520.000	
Variable costs (W2)			(2,200.000)	(2,200.000)	
Fixed costs (W3)		(355.000)	(355.000)	(355.000)	
Rent	(80.000)	(80.000)	(80.000)		**1 mark**
Tax on extra profit (W4)	16.800	91.350	(185.850)	(202.650)	
Working Capital		(340.000)	(10.000)	350.000	**2 marks**
Total cash flows	(1,217.840)	(646.455)	719.650	1,741.095	
8% discount	1.000	0.926	0.857	0.794	**1 mark**
PV	(1,217.840)	(598.617)	616.740	1,382.429	**1 mark**
NPV	182.712				

The NPV is positive and so the equipment should be purchased as GV's shareholder wealth will increase.

Note. Full credit given if answer done in round £'000.

WORKINGS

(1) *Tax on capital allowance*

	t_0	t_1	t_2	t_3
	£'000	£'000	£'000	£'000
Cost/WDV b/f	1,200.000	984.000	806.880	661.642
WDA @ 18%/Bal charge	(216.000)	(177.120)	(145.238)	(41.642)
WDV/sale	984.000	806.880	661.642	620.000
Tax on WDA @ 21%	45.360	37.195	30.500	8.745

4 marks

(2) *Annual sales value*   88,000 × £40 = 3,520,000

Annual variable costs   88,000 × £25 = 2,200,000

2 marks

(3) *Fixed costs*

Fixed costs per question	£660,000
Less bank interest	(92,000)
head office allocation	(68,000)
depreciation charge ([£1,200,000 – £620,000]/4)	(145,000)
Relevant Fixed Costs	355,000

3 marks

(4) *Tax on extra profit*

	t_0	t_1	t_2	t_3
	£'000	£'000	£'000	£'000
Sales			3,520.000	3,520.000
Variable costs			(2,200.000)	(2,200.000)
Fixed costs		(355.000)	(355.000)	(355.000)
Rent	(80.000)	(80.000)	(80.000)	0
Extra profit/(loss)	(80.000)	(435.000)	885.000	965.000
Tax on extra profit @ 21%	16.800	91.350	(185.850)	(202.650)

2 marks

Total: 17 marks

1.2 (a) **Sensitivity of annual sales**

Total current annual contribution ([£40 – £25] × 88,000)		£1,320,000
Less tax at 21%		(277,200)
		1,042,800
Total discount factor for t_2 and t_3 (0.857 + 0.794)		× 1.651
PV generated from contribution		£1,721,663

2 marks

Net present value of scheme (from (a))		£182,712
Sensitivity of annual sales	£182,712/£1,721,663	10.61%
	(88,000 × 10.61%)	9,337 units
Break-even level of annual sales		78,663 units
	(88,000 – 9,337)	

2 marks

Annual sales volume is fairly sensitive – a 10.6% overestimation of the expected sales would mean that the investment is in fact not worthwhile. **1 mark**

(b) **Sensitivity of sales proceeds of equipment**

Let X be the fall in the resale value (and, therefore, the rise in the balancing allowance).

$(X \times 0.794) - (X \times 0.21 \times 0.794) = £182,712$ (NPV from (a))

$0.794X - 0.16674X = £182,712$

$0.62726X = £182,712$

$X = £291,286$

So the resale value can fall to (£620,000 – £291,286) = £328,714 **4 marks**

The sale proceeds of the equipment are not very sensitive. Estimated proceeds would have to fall by 47% before the NPV became negative. **1 mark**

(c) **Sensitivity of rent**

	t_0	t_1	t_2
	£'000	£'000	£'000
Rent – tax (80 × 0.79)	(63.200)	(63.200)	(63.200)
8% discount	1.000	0.926	0.857
PV	(63.200)	(58.523)	(54.162)

PV of rent is £(175,885)

Sensitivity of rent = 182,712/175,885 = 103.9% **2 marks**

The decision is not very sensitive to change in rental costs. Rent would have to increase by 104% before the NPV became negative. **1 mark**

Max: 12 marks

1.3 There are seven drivers of SVA; each of these could be applied to the project as follows:

(1) Increase the rate of growth of sales

(2) Increase the operating profit margin by increasing selling price/decreasing variable costs

(3) Reduce the investment in non-current assets by acquiring for less than £1.2m

(4) Reduce the investment in working capital

(5) Reduce the firm's cost of capital, by changing the capital structure

(6) Extend the life of the project beyond three years

(7) A fall in the rate of corporation tax, although this is beyond the control of the company   **1 mark per driver discussed**

Max: 6 marks

2 Brent plc

		Marks
2.1 (a) Calculation of theoretical ex-rights price	2	
(b) Calculation of theoretical ex-rights price	1	
		3
2.2 EPS calculations (current)		
1 mark each for: debenture interest, tax, EPS, P/E ratio	4	
New EPS figures		
1 mark each for PBIT, debenture interest, tax	3	
Rights issue: 1 mark each for EPS and share price	2	
Debenture issue: 1 mark each for EPS and share price	2	
		11
2.3 Specific points	2	
General points	2	
Traditional view	2	
Modigliani and Miller view	2	
Modern view	2	
Practical issues	2	
Maximum		7
2.4 Up to 2 marks per issue discussed	max	7
2.5 General comments	1½	
Dividend signalling	1½	
Modigliani and Miller	1½	
Taxation	1	
Clientele effect	1½	
Pecking order theory	1½	
Cash	1	
Agency theory	1½	
Maximum		7
Total		35

2.1

	Shares		£m
Current shares (220 × 2)	440m	£3.20	1,408
Rights issue (1 for 10)	44m	£2.50	110
Totals	484m		1,518

(a) Theoretical ex-rights price = £1,518m/484m =   £3.14/share

2 marks

(b) Theoretical ex-rights price inc. NPV = (£1,518m + 120m)/484m = £3.38/share

1 mark

2.2 **Current Earnings per Share figure**

	£m	
Profit before Interest and Taxation	260.000	
Less debenture interest (7% × £220m)	(15.400)	**1 mark**
Profit before Taxation	244.600	
Less taxation at 21%	(51.366)	**1 mark**
Profit after Taxation (Earnings)	193.234	

Earnings per share = £193.234m/440m =	£0.439	**1 mark**
Price earnings ratio = £3.20/£0.439 =	7.29	**1 mark**

(Or by totals = 1,408/193.234)

New Earnings per Share figures

	(i) Rights issue £m	(ii) Debenture issue £m	
Profit before Interest and Taxation (260m × 1.15)	299.000	299.000	**1 mark**
Less debenture interest (7% × £220m)	(15.400)	(15.400)	
(6% × £110m)	0.000	(6.600)	**1 mark**
Profit before Taxation	283.600	277.000	
Less Taxation at 21%	(59.556)	(58.170)	**1 mark**
Profit after Taxation (Earnings)	224.044	218.830	

Earnings per share = £224.044m/484m =	£0.463		**1 mark**
Share price = P/E × EPS = 7.29 × £0.463	£3.38		**1 mark**
Earnings per share = £218.830m/440m =		£0.497	**1 mark**
Share price = P/E × EPS = (7.29 × 80%) × £0.497		£2.90	**1 mark**

Total: 11 marks

2.3 **Specific points regarding the scenario**

Brent plc already has a reasonable level of gearing, ie 26.5% (£220m/£830m). If Brent is at or near its optimal level of gearing (see below), shareholders may react negatively to the additional debt which would push the gearing level up to 35.1% (£330m/£940m). Accordingly the cost of equity would rise and the ordinary share price would fall. **2 marks**

General points regarding capital [financial] gearing (CG)

CG = financing partly through fixed-return finance (in practice, usually loans).

Loan finance is cheap because:

- It's a low risk to lenders.
- It's tax deductible.

CG has the potential to increase returns to shareholders.

CG has the effect of increasing the variability (risk) of returns to shareholders – financial risk.

2 marks

Traditional view of CG

The two reasons for loan finance being cheap lead to a lowering of WACC.

Shareholders and lenders are unconcerned about increased risk at lower levels of gearing.

As gearing increases, both groups start to be concerned, thus higher returns are demanded and so WACC increases.

WACC decreases (value of equity increases) as gearing is introduced, reaches a minimum (the optimum level of gearing) and then starts to increase again. **2 marks**

Modigliani and Miller (MM) view of CG

Shareholders are immediately concerned by the existence of gearing.

Ignoring taxes, 'cheap' loan finance is precisely offset by the increasing cost of equity. So WACC remains constant at all levels of gearing, ie there is no optimum level, and so managers should not concern themselves with gearing questions.

With tax taken into account, interest is cheap enough to cause WACC to fall despite the increasing cost of equity. This leads to an all-debt-financing conclusion, but is illogical (with an imperfect capital market) since interest rates would increase at high levels of gearing. **2 marks**

Modern view of CG

MM are probably right that gearing is beneficial only because of tax relief.

At high levels of gearing, the costs of the business going into enforced liquidation (bankruptcy) become significant.

Conclusion – businesses should gear up to a point where the benefits of tax relief are balanced by potential costs of bankruptcy – here WACC will be at a minimum and the value of the business will be at a maximum. **2 marks**

Practical issues regarding CG

Most businesses seem to use gearing, but not to very high levels.

High operating gearing businesses may be unsuitable for high capital gearing.

Directors may not favour as high a level of gearing as is beneficial to shareholders (agency problem).

Businesses may attract shareholders because of their gearing level (clientele effect).

High tax rates will encourage high gearing.

Tax capacity (having sufficient profit to be able to benefit from the tax relief on interest) may well affect gearing levels.

The relative costs of raising funds (issue costs):

- Equity from retained profit – virtually nothing.
- Equity from rights or public issue – very expensive.
- Debt finance – relatively cheap. **Max: 2 marks**

Max: 7 marks

2.4 As the client making the rights issue is also an assurance client, then there is a greater self-interest threat and an increased risk of advocacy. There is also a high chance of a self-review threat. Safeguards should be implemented in order to manage these risks.

A professional accountant in public practice's objectivity may be seriously threatened if their role involves undertaking the management responsibilities of an assurance client. Accordingly, the professional accountant in a public practice firm should ensure that the client takes full responsibility for the final decisions arising from any such negotiations.

For any document prepared solely for the client and its professional advisers, it should be a condition of the engagement that the document should not be disclosed to any third party without the firm's prior written consent.

A professional accountant in public practice who is an auditor or reporting accountant shall not deal in, underwrite or promote shares for their client. Involvement of this kind would give rise to an advocacy threat, self-review threat and self-interest threat such that the professional accountant in public practice's objectivity and independence would be threatened.

Professional accountants in public practice shall be aware of the danger of a conflict of interest arising. All reasonable steps should be taken to ascertain whether a conflict of interest exists or is likely to arise in the future between a professional accountant in public practice and his clients, both with regard to new clients and to the changing circumstances of existing clients, and including any implications arising from the possession of confidential information.

Where a conflict of interest is so fundamental that it cannot be managed effectively by the implementation of appropriate safeguards and is likely seriously to prejudice the interests of a client, the engagement should not be accepted or continued even if all relevant clients consent to the engagement.

Up to 2 marks per issue discussed

Max: 7 marks

2.5 The newspaper article is espousing the traditional theory regarding dividends, which argues that £1 of dividend income received now is more certain than £1 of gain (the 'bird in the hand' approach). Greater value would be put on a firm paying a dividend (and issuing shares to finance new investments) than one using retentions (ie cutting dividends). This implies that cost of equity increases with time, ie later cash flows should be discounted at a higher rate than earlier cash flows. In fact, rather than being related to time, risk is related to the nature of the project which produces the cash flows. So, as long as an appropriate risk-adjusted rate is used, there is no need to value earlier cash flows more highly than later cash flows. **1½ marks**

Additional/alternative theories regarding dividends are:

Dividend signalling

In reality investors do not have perfect information concerning the future prospects of the company. Many authorities claim, therefore, that the pattern of dividend payments is a key consideration on the part of investors when estimating future performance. For example, an increase in dividends would signal greater confidence in the future by managers and would lead investors to increase their estimate of future earnings, and cause a rise in share prices. A sudden dividend cut on the other hand would usually have a serious effect upon equity value, as estimates of future dividend flows are also cut.

1½ marks

Preference for current income

Many investors require cash dividends to finance current consumption which implies that many shareholders will prefer companies which pay regular cash dividends and will therefore value their shares more highly.

Modigliani and Miller challenged this argument and claimed that investors requiring cash can generate 'home-made dividends' by selling shares. This argument has some attractions but it ignores transaction costs. **1½ marks**

Taxation

Income and capital gains are taxed differently in the UK and there may be a preference for income or capital gains depending on the investor's tax position.

1 mark

Clientele effect

Investors may be attracted to firms by their dividend policies. This might be because high pay-outs attract those who prefer current income or low payments attract those with high marginal income tax rates. Low pay-outs may also attract those seeking capital gains. Major changes in dividend policy should be avoided if possible as these might upset particular clienteles who sell their shares, pushing down the share price. While new clienteles may find the new policy attractive and buy shares, the overall climate of uncertainty as to what is the long-term dividend policy could have a depressing effect on the share price. **1½ marks**

Pecking order

It has been suggested that because of issue costs firms try to access equity finance in a particular sequence, ie they follow a 'pecking order'. Retained earnings are usually the cheapest source of finance as they involve no issue costs. However, if they are used too extensively the result can be a substantial cut in dividends, which will upset shareholders, depress the share price and drive up the cost of equity.

1½ marks

Cash

If cash is unavailable to pay a dividend (perhaps because positive NPV projects exist which, if invested in, leave cash unavailable for dividends), either the planned investment should be cut back or money borrowed if it is felt that payment of a dividend is necessary to avoid adverse signalling effects. **1 mark**

Agency theory

Managers/directors do not necessarily act in the best interests of shareholders. Shareholders can keep some control over their money by insisting on high pay-out ratios. If managers/directors want new funds for investment, they are forced to issue shares (by rights issue or to the public) and justify why the investment is sound. Obviously, managers/directors would prefer to use retentions in this instance. The agency cost is represented by the cost of the new share issue. Even if managers are allowed to use retentions for investment (with correspondingly lower pay-outs), there may still be an agency cost for shareholders in that managers may invest in 'empire building' projects, rather than in those which increase shareholder wealth. **1½ marks**

Max: 7 marks

3 Wooton Airtech

			Marks
3.1 (a)	Number of contracts	1	
	Type of contract	½	
	Date of contract	½	
	Total $ cost of contracts	1	
	Exchange rate choice	1	
	Sterling cost of contracts	½	
	Net receipt	½	
(b)	Sterling futures:		
	Number of contracts	½	
	Type of contract	½	
	Date of contract	½	
	Loss on exchange rate	1	
	Loss on futures trade	1	
	Net receipt	1	
	Sold at spot rate	½	
(c)	Correct rate	1	
	Net receipt	1	
			12
3.2	1 – 2 marks per valid point		max 7
3.3 (a)	Number and type of contract	1	
	Gain on futures trade	1	
	Futures outcome	½	
	Receipt in spot market	½	
	Net receipt	½	
	Futures gain	½	
			4
(b)	Movement in futures price	½	
	Loss on future trade	½	
	Futures outcome	½	
	Receipt in spot market	½	
	Futures loss	½	
	Net receipt	½	3
3.4	Forward rate agreement	3	
	Interest rate future	2	
	Maximum		4
			30

3.1 (a) Wooton is selling dollars and therefore buying sterling – a call option on sterling. **½ mark**

As it is an August receipt, it will need September contracts. **½ mark**

A September call option at $1.445/£ costs $0.0114

No of contracts = $1,675,000/1.445/31,250 = 37 **1 mark**

Total dollar cost of 37 contracts = 37 × (31,250 × $0.0114) = $13,181 **1 mark**

Sterling cost today = $13,181/1.4305 = £9,214 **½ mark**

Amount due from MWA	$1,675,000
Option not exercised as the spot rate is better, so exchange rate is	$1.4296
Sterling equivalent ($1,675,000/1.4296)	£1,171,656
Less cost of premium	(£9,214)
Net receipt	£1,162,442

1 mark (for Amount due / option not exercised rows)

½ mark (Net receipt)

(b) Wooton is selling dollars and therefore buying sterling futures. **½ mark**

Again it will need September contracts, price = $1.4349/£ **½ mark**

No of contracts = $1,675,000/1.4349/62,500 = 19 **½ mark**

Close out future	$
Buy sterling at	1.4349
Sell sterling at	1.4296
Loss	0.0053

1 mark

Loss on futures trade = 19 × ($0.0053 × 62,500) $6,294 **1 mark**

Receipt due from MWA	$1,675,000
Less loss on futures trade	($6,294)
	$1,668,706

1 mark

Sold at spot rate ($1,668,706/1.4296)   £1,167,254 **½ mark**

(c) The discount is added to the spot rate to give a forward rate of

1.4305 + 0.0055 = $1.4360/£ **1 mark**

Net sterling receipt = $1,675,000/1.4360 = £1,166,435 **1 mark**

Total: 12 marks

3.2 The future gives a better result than the option (£4,812 higher) and the forward contract (£819 higher). With futures and the forward contract giving very similar receipts, the transaction cost may be an important factor and this is likely to be lower for the future. However the future will be a fixed sterling receipt, whereas if the exchange rate moves below the estimated spot rate in August the option could prove to be the better choice. The break-even exchange rate for this is $1.4238/£ ($1,675,000/[£1,167,254 + £9,214]). This is a 0.4% weakening of sterling on the

estimated spot rate. A 1% weakening of sterling therefore would mean that the option gave the best return. Management's attitude to risk will be an important factor here.

1 – 2 marks per valid point. Max: 7 marks

3.3 (a) Wooton wishes to deposit for three months and so will buy one (£500,000/£500,000) interest rate September future at 93.25 now and sell it in August. **1 mark**

If interest rates fall then the September futures price will increase (by 1.25) to 94.50

Futures trade:	Buy at	93.25	
	Sell at	94.50	
	Gain	1.25%	**1 mark**
Futures outcome	1 × (500,000 × 1.25% × 3/12)	Gain £1,562.50	½ mark
Net outcome	Receipt in spot market (£500,000 × (5.5 – 1.25)% × 3/12)	£5,312.50	½ mark
	Plus futures gain	£1,562.50	½ mark
	Net receipt	£6,875.00	½ mark

Target is 5.5% × 3/12 × £500,000 = £6,875 so 100% efficient

(b) If interest rates rise then the September futures price will fall (by 1.25) to 92.00. **½ mark**

Futures trade:	Buy at	93.25	
	Sell at	92.00	
	Loss	1.25%	½ mark
Futures outcome	1 × (500,000 × 1.25% × 3/12)	Loss £1,562.50	½ mark
Net outcome	Receipt in spot market (£500,000 × (5.5 + 1.5)% × 3/12)	£8,750.00	½ mark
	Less futures loss	(£1,562.50)	½ mark
	Net receipt	£7,187.50	½ mark

£7,187.50/£6,875 = 104.5% efficient

Total: 7 marks

3.4 **Forward Rate Agreement (FRA)**

An FRA allows the borrower or lender to fix their future rate of interest. It is for a given period and any differences between the 'contracted' and actual interest rate are settled between the borrower/lender and the bank at the conclusion of the FRA. It is the equivalent of a forward contract.

They are set up with a bank which makes them straightforward and they can be tailored to meet exact requirements.

They are short term (usually less than one year).

They remove upside potential (fixed rate). **3 marks**

Interest rate future

The terms, amounts and periods are standardised, which makes them less flexible.

Transaction costs are usually lower than FRAs.

More difficult to arrange than an FRA.

2 marks

Max: 4 marks

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