



PROFESSIONAL LEVEL EXAMINATION

SEPTEMBER 2016

Mock Exam 1

FINANCIAL MANAGEMENT

ANSWERS

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Marking guide

		Marks
1.1 Correct best case NPV (see detailed marking scheme below)	9	
Correct worst case NPV (see detailed marking scheme below)	<u>9</u>	
		18
1.2 Distinction between risk and uncertainty	$\frac{1}{2}$	
Pointing out that risk data should be available here	$\frac{1}{2}$	
Risk and uncertainty approaches. $\frac{1}{2}$ to 1 mark per point to maximum of	<u>5</u>	
		6
1.3 Further issues		
1 mark per valid point to maximum of		6
1.4 1 mark per valid point to maximum of		<u>5</u>
Total		<u><u>35</u></u>

1.1 Evaluation of the offer price

Best case

	T_0	T_1	T_2	T_3	
Year	1/1/17	31/12/17	31/12/18	31/12/19	Marks
	£000	£000	£000	£000	
Investment in equipment	(1,000)				$\frac{1}{2}$
Capital allowances (W1)		38	31	141	1½
Operating cash flows (W2)		927	955	983	2
Tax on op cash flows at 21%		(195)	(201)	(206)	$\frac{1}{2}$
Working capital (W3)	<u>(155)</u>	<u>(4)</u>	<u>(5)</u>	<u>164</u>	2
	<u>(1,155)</u>	<u>766</u>	<u>780</u>	<u>1,082</u>	$\frac{1}{2}$
Discount factors (W4)	1.000	0.883	0.772	0.669	1½
Discounted values	<u>(1,155)</u>	<u>676</u>	<u>602</u>	<u>724</u>	$\frac{1}{2}$

Total: 9 marks

Net present value = £847,000

Worst case

Year	T_0 1/1/17 £000	T_1 31/12/17 £000	T_2 31/12/18 £000	T_3 31/12/19 £000	Marks
Investment in equipment	(1,000)				½
Capital allowances (W1)		38	31	141	1½
Operating cash flows (W5)		464	477	492	2
Tax on op cash flows at 21%		(97)	(100)	(103)	½
Working capital (W6)	<u>(103)</u>	<u>(3)</u>	<u>(3)</u>	<u>109</u>	2
	<u>(1,103)</u>	<u>402</u>	<u>405</u>	<u>639</u>	½
Discount factors (W4)	1.000	0.883	0.772	0.669	1½
Discounted values	<u>(1,103)</u>	<u>355</u>	<u>313</u>	<u>427</u>	½

Total: 9 marks

Net present value = (£8,000)

WORKINGS**(1) Capital allowances**

Year		£000		£000
2017	Cost	1,000		
	WDA 18%	<u>(180)</u>	@ 21%	38
		820		
2018	WDA 18%	<u>(148)</u>	@ 21%	31
		672		
2019	Disposal	<u>—</u>		
	Balancing allowance	<u>672</u>	@ 21%	141

(2) Operating cash flows*Best case scenario:*

Real terms sales = £1.5m

Real terms costs = £0.3m (variable (20%)) + £0.3m (fixed (0.5 – 0.2)) = £0.6m

Note. The £0.2m head office costs are an accounting allocation and are not incremental to the activities of Hire-it

Money (or nominal) operating flows

	£000
2017 $[(£1,500 - £600) \times (1.03)]$	927
2018 $[(£1,500 - £600) \times (1.03)^2]$	955
2019 $[(£1,500 - £600) \times (1.03)^3]$	983

(3) **Working capital**

Best case scenario:

	<i>Working capital needed in place</i>	<i>Incremental cash flow</i>
At 31 December	£000	£000
2016 $[(£1,500 \times 1.03) \times 10\%]$	(155)	(155)
2017 $[(£1,500 \times 1.03^2) \times 10\%]$	(159)	(4)
2018 $[(£1,500 \times 1.03^3) \times 10\%]$	(164)	(5)
2019	zero	164

(4) **Discount factors – money rates**

2017	$1/(1 + 0.10) (1 + 0.03)$	= 0.883
2018	$1/(1 + 0.10) (1 + 0.11) (1 + 0.03)^2$	= 0.772
2019	$1/(1 + 0.10) (1 + 0.11) (1 + 0.12) (1 + 0.03)^3$	= 0.669

(5) **Operating cash flows**

Worst case scenario:

Real terms sales = £1.0m

Real terms costs = £0.25m (variable (25%)) + £0.3m (fixed) = £0.55m

Money (or nominal) operating flows

	£000
2017 $[(£1,000 - £550) \times (1.03)]$	464
2018 $[(£1,000 - £550) \times (1.03)^2]$	477
2019 $[(£1,000 - £550) \times (1.03)^3]$	492

(6) **Working capital**

Worst case scenario:

	<i>Working capital needed in place</i>	<i>Incremental cash flow</i>
At 31 December	£000	£000
2016 $[(£1,000 \times 1.03) \times 10\%]$	(103)	(103)
2017 $[(£1,000 \times 1.03^2) \times 10\%]$	(106)	(3)
2018 $[(£1,000 \times 1.03^3) \times 10\%]$	(109)	(3)
2019	zero	109

1.2 Traditionally the distinction between risk and uncertainty has been characterised by risk being capable of being measured while uncertainty refers to unquantifiable factors. (½ mark)

Risk is best handled by using:

- Probability distributions (½ mark)
- Expected values (½ mark)
- Monte Carlo simulation (½ mark)
- Risk-adjusted discount rates (for example using the CAPM) (½ mark)

Techniques for handling uncertainty are generally more crude but practically just as useful.

These include the following:

- Setting a minimum payback period for projects on the basis that projects that pay back quickly are generally lower risk – the near future is more 'knowable' than the distant future **(1 mark)**
- Increasing the discount rate subjectively in order to submit the project to a higher 'hurdle' rate in investment appraisal **(1 mark)**
- Making prudent estimates of outcomes to assess the worst possible situation **(1 mark)**
- Assessing both the best and the worst possible situations to obtain a range of outcomes (as has been done here) **(1 mark)**
- Using sensitivity analysis to measure the 'margin of safety' on input data **(1 mark)**

In the case of Hire-it, there appears to be both revenue and cost data available from the last ten years. Although high and low revenues and high and low costs occur randomly, this would not prevent the probabilities of these occurrences being calculated. The probability data could be used to convert the current calculations (made under conditions of uncertainty) into calculations made under conditions of risk. For example, expected values could be calculated and these would be a useful addition to the information available. **(2 marks)**

Total: 6 marks

1.3 Issues for the buy-out team

Valuation issues

There is a very large difference between the most optimistic and most pessimistic outcomes. A consensus needs to be reached between buyers and sellers. As noted, expected value calculations could help. **(1 mark)**

A short timescale for the projected cash flows has been used, but the team presumably believes that the Hire-it business can continue much further into the future, possibly with higher levels of operating profits than it has experienced in the past ten years. The directors' scepticism about Hire-it could well have led to the division being overlooked and left to stagnate. As a separate business with committed managers, this could very well breathe life into it. **(1 mark)**

The tax rate of the new independent Hire-it business may well be less than 21% (Boxer's rate), which means that the cash flows, and therefore the value of the business, will be greater. **(1 mark)**

Though correct under the valuation formula, Hire-it's share of head office costs was ignored (because it would not represent a saving to Boxer); this would be a cost to Hire-it. Presumably head office provided Hire-it with services (perhaps accounting, human resources etc) that Hire-it would now have to

provide. The valuation method might therefore overvalue the division, from the team's perspective, in this regard. (1 mark)

The basis on which the discount rates have been estimated should be assessed in detail. (½ mark)

The team must logically look at the cost of setting up a similar operation from scratch, bearing in mind any goodwill value of the Hire-it name and that Hire-it could well stay on as a competitor. If this looks cheaper than the buy-out, the buy-out should probably not go ahead. (1 mark)

Advice

The buy-out team needs to get a finance professional to look at the figures to assess the reasonableness – a financier may be able to assist in finding an appropriate source of advice. (½ mark)

Finance

If the team wishes to proceed, it will have to raise the necessary cash. It may be able to find the funds from its own resources. It may be able to get Boxer to accept instalments, with interest at an agreed rate on the outstanding balances. (1 mark)

Venture capital might be a possibility, but venture capitalists tend to take equity interests and need an exit route. This could come from selling the business off in a few years to another company or, if it is very successful, through a flotation on a stock market. (1 mark)

A bank might be prepared to advance a term loan, but it would almost certainly want security. There is no mention that any of Hire-it's assets include items which banks tend to favour as security. The only tangible asset of the new Hire-it will probably be its garden maintenance equipment which might deteriorate quickly as hirers might not take great care. The personal assets (eg houses) of the buy-out team might provide some or all of the security. (1 mark)

Leasing or hire-purchasing the garden equipment should be investigated. (½ mark)

A business angel could be another possibility. (½ mark)

Total: 6 marks

1.4 Traditional view

Loan finance is cheap because (i) it's low risk to lenders and (ii) loan interest is tax deductible. This means that when gearing is initially introduced, WACC decreases. (1 mark)

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

As gearing increases, both groups start to be concerned – higher returns are demanded and so WACC increases. (1 mark)

Thus, WACC initially decreases (value of equity increases) as gearing is introduced. It reaches a minimum and then starts to increase again. This minimum is the optimal level of gearing. **(1 mark)**

Modigliani and Miller (MM) view

Shareholders immediately become concerned by the existence of any gearing.

Ignoring tax, total returns to investors are not affected by capital structure. The gearing level simply affects how this total return is shared between lenders and shareholders (ie more debt implies a higher proportion will be given to lenders). As returns are not affected by the gearing level, it follows that the value of the business should not be affected by the gearing level. If the value of the business is unaffected, this implies the WACC (the discount rate to apply to that business' cash flows to calculate its value) must be unaffected by the gearing level. **(1 mark)**

Taking taxation into account, net interest costs are even less as interest payments are tax deductible. This therefore causes the WACC to fall as gearing increases despite an increasing cost of equity. This leads to an all-debt-financing conclusion. **(1 mark)**

Conclusion

Although MM demonstrate that higher gearing reduces the WACC, practically there will be a limit to this effect – risk will become excessive at higher levels of borrowing pushing the WACC up. In addition tax exhaustion may become an issue – with high interest payments, tax payable may have already been completely eliminated so the cost of debt is the gross cost again as further interest payments will no longer afford a tax saving. Also, practically, new lending may need to be unsecured if all assets have already been offered as security. This again will increase the cost of debt and so the WACC.

Therefore there is a balance to strike between gearing up to access the benefits of cheap debt and associated tax deductible interest payments, but not being stressfully highly geared. An appropriate balance will minimise the WACC and so maximise the value of the business. **(1 mark)**

Practically, Hire-it might prefer equity finance given the risk associated with historical operational cash flows, and potentially a lack of security to offer to lenders. This in turn depends on the availability of equity finance however. **(1 mark)**

Total: 5 marks

Marking guide

	Marks
2.1 Dividend irrelevance calculations	10
2.2 (a) Evaluation of Chairman's view	2
Evaluation of COO's view	2
Arguments against MM's view – 1 mark per point to maximum of	4
Dividend policy – 1 mark per point to maximum of	<u>3</u>
	11
(b) Analysis of figures (including dividends per share, dividend payout ratio)	4
Comments on figures – 2 marks per valid point to maximum of	<u>4</u>
	8
(c) 2 marks per valid point to maximum of	<u>6</u>
Total	<u><u>35</u></u>

Marks
2.1 Impact of the new project and related finance on the value of the business.

	£ million
Current ex-div value of shares = 7.5 million × £4.00	30.0
NPV of the project	0.5
Increase in equity capital	<u>0.75</u>
Ex-div value of shares afterwards	<u><u>31.25</u></u>

Alternative working:

Existing dividend = £0.4 × 7.5m = £3.0m

Increase in dividend = £0.125m (annual income)

$$P = \frac{D_1}{k_e} = \frac{£3.0m + £0.125m}{0.1} = £31.25m$$

This will be the ex-div value of the equity irrespective of how the money is raised. The cum-div value will be affected if some of the dividend is retained, but the wealth of the shareholders will not be. **(2 marks)**

Financed by retained earnings (ie by reducing the dividend about to be paid)

(£millions)	<i>Ex-div value</i>	+ <i>Dividend</i> =	<i>Cum-div value</i>	} Increase in shareholder wealth is £0.5m, being NPV of project
Before:	30	3.0	<u>33.0</u>	
Capital: using dividend	0.75	(0.75)		
Project outlay:	(0.75)			
PV (inflow)	<u>1.25</u>			
NPV Project	<u>0.50</u>			
	<u>31.25</u>	<u>+ 2.25m</u>	<u>= 33.5m</u>	
	(from above)			(2 marks)

Financed by a rights issue

(£millions)	<i>Ex-div value</i>	+ <i>Dividend</i> =	<i>Cum-div value</i>	} Increase in s'holder wealth is: Increase in value of equity 1.25m Less new funds injected (0.75m) <u>£0.50m</u>
Before:	30	3.0	<u>33.0</u>	
Capital:	0.75			
Project outlay	(0.75)			
PV (inflow)	<u>1.25</u>			
NPV Project	<u>0.50</u>			
	<u>31.25</u>	<u>3.0</u>	<u>34.25</u>	(2 marks)

In conclusion, the change in shareholders' wealth is the same, irrespective of how the new capital is injected. **(1 mark)**

New share issue

While the wealth of the shareholders in total is unaffected by the source of the new equity, the way that wealth is divided between the shareholders is influenced by the price chosen. The company therefore needs to consider carefully the asking price per share.

If these new shareholders are allowed to enter the company too cheaply, the increased number of shares will detract from the wealth of existing shareholders; if priced too highly they will refuse to subscribe.

If all of the gain is to go to the existing shareholders the ex-div value of their 7.5m shares must be £30.5m after accepting the project ie $(£30.5m/7.5m) = £4.07$ each. If the company wants to set a price of £4.07, they will need to issue $£750,000 \div £4.07 = 184,275$ new shares, but the issue is unlikely to be successful as the price is above the current ex-div value of the shares. **(3 marks)**

2.2 (a) **Chairman's view**

At present the company has only one major shareholder, David Nile, who owns 80% of the shares. The extent to which Mr Nile has been involved in the management of the company is not clear, but it seems likely that he has been involved in and has approved previous decisions regarding dividends, probably in response to the investment needs of the company, and perhaps with an eye to his own individual cash requirements and tax position at different times. The Chairman is therefore correct to point out that the company has not needed to be concerned about the signals sent by its dividend policy in the past because it has been retaining profits as needed to develop the business. In addition the main shareholder was close to operations, hence was in a position to fully understand and influence dividend policy. **(2 marks)**

Chief Operating Officer's views

The **Chief Operating Officer** says that the pattern of dividends has no effect on shareholder wealth, presumably following the theory put forward by Modigliani and Miller (MM) that dividend policy is irrelevant assuming perfect information, and no taxes or transaction costs. Under these assumptions shareholders can make their own adjustments (buying or selling shares) – known as ‘manufacturing dividends or capital gains’ – to achieve the level of income they require from their investments.

This may have been true in the case of David Nile, who possibly began with a 100% stake and may since have sold 20% of his shares, albeit finding a buyer may have been difficult given Cuando was not listed. However, for operational cash flow reasons he may have had to invest more money in the company in the meantime (during years ended 30 June 2013 and 2015), given the increase in share capital from 800,000 shares to 1.5 million, so this argument may be a little tenuous. **(2 marks)**

Arguments against MM

In any case, there are strong arguments against MM's view that dividend policy is irrelevant as a means of affecting shareholders' wealth.

- The existence of differing rates of taxation on dividends and capital gains can create a preference for a high dividend or one for high earnings retention. **(1 mark)**
- Due to imperfect markets and the possible difficulties of selling shares easily at a fair price, shareholders might need high dividends in order to have funds to invest in opportunities outside the company. **(1 mark)**

- Transaction costs on the sale of shares exist so investors who want some cash from their investments would prefer to receive dividends rather than to sell some of their shares to get the cash they want, as the latter incurs costs such as brokerage fees. **(1 mark)**
- Information available to shareholders is imperfect, and they are not always aware of the future investment plans and expected profits of their company, or their opinions may differ from management. Even if management were to provide them with profit forecasts, these forecasts would not necessarily be accurate or believable. **(1 mark)**
- As a consequence of imperfect information, companies are normally expected at least to maintain the same level of dividends from one year to the next. They are generally expected to pay a constant dividend or an increased dividend, but not a lower dividend than the year before. Failure to maintain the dividend level may well undermine investors' confidence in the future. **(1 mark)**
- Perhaps the strongest argument against the MM view is that shareholders will tend to prefer a current dividend to future capital gains (or deferred dividends) because the future is more uncertain. **(1 mark)**

Dividend policy in practice

In practice, dividend policy is significant to shareholders and the Chairman's view that a listing, putting all of the shares into public hands, will make dividend policy a more pressing issue is exactly in line with conventional thinking about dividend policy. **(1 mark)**

Unexpected changes in dividend payments will have an effect on the share price, and to avoid upsetting the market, a company might try to apply a policy of a consistent payout ratio (ratio of dividends to distributable profits for the year). **(1 mark)**

Companies will often also 'smooth' dividend payments, ignoring 'temporary' fluctuations in annual profitability. Shareholders might therefore expect to receive dividends from a company that grows each year. **(1 mark)**

Market expectations can therefore be a major factor in the formulation of dividend policy, and listed companies are likely to be extremely reluctant to permit the kind of fluctuations in dividend level that have occurred in the case of Cuando in the past. **(1 mark)**

Total: 11 marks

(b) The figures that are available can be analysed as follows.

	<i>Net profits</i>	<i>Annual growth</i>	<i>Dividends</i>	<i>Shares in issue</i>	<i>Earnings per share</i>	<i>Dividends per share</i>	<i>Dividend payout ratio</i>
	£'000	%	£'000	'000	£	£	%
2012	650	–	320	800	0.81	0.40	49.23
2013	520	(20.00)	150	1,000	0.52	0.15	28.85
2014	760	46.15	480	1,000	0.76	0.48	63.16
2015	1,240	63.16	600	1,500	0.83	0.40	48.39
2016	1,450	16.94	540	1,500	0.97	0.36	37.24
Average					0.78	0.36	45.37

Quando's earnings have increased steadily apart from a dip in its second year. However, without more detailed information no clear pattern to the growth can be discerned. Most growth was achieved in the years ended 30 June 2014 and 2015. **(4 marks)**

Earnings per share are on average around 80p with a dividend payout ratio of on average around 45% of this, but there is no consistent pattern at all. A higher than usual dividend was paid in year ended 30 June 2014, presumably to compensate shareholders for the much smaller dividend in 2013, but in the following year, 2015 (when the most spectacular growth occurred), the dividend fell back again to its 2012 level. Despite the rise in earnings per share in 2016 the dividend per share fell once more.

(2 marks)

It may well be therefore that to date a '**residual policy**' had been adopted, with dividends only paid after cash flows needed for reinvestment have been calculated and provided for. **(2 marks)**

As mentioned in part (b) this policy has presumably been acceptable to the one major shareholder, but when his shares are sold to the public a change seems very desirable on the grounds that shareholders typically expect consistency, at the very least, and prefer steady growth to wild fluctuations for no apparent reason. **(2 marks)**

Total: 8 marks

(c) Besides matters already mentioned in this answer there are a number of other factors that affect dividend policy, including the following.

- The purpose of retaining profits should usually be to invest in new projects, in order to develop and grow the business. Unless there are profitable investments available to invest in, there should be no reason to retain the profits instead of paying them out as dividends. **(2 marks)**
- Companies are prevented by law from distributing dividends in excess of the distributable reserves of the company. Broadly speaking, distributable profits are accumulated profits. A loss-making company might therefore find its ability to pay dividends is restricted. **(2 marks)**

- Dividends have to be paid in cash (given that scrip dividends are uncommon). In order to make a dividend payment, a company must therefore have sufficient free cash flow to afford to make the payment. It is quite possible for a company to make profits but have insufficient cash to pay a suitable dividend. **(2 marks)**
- The board of directors might want to use dividend policy to provide signals to the market about expectations for future profits and growth, or simply to meet expectations currently reflected in the share price. An increase in dividends could be used to signal optimism about the future. If the signal is well received, the share price could be boosted. **(2 marks)**
- The tax positions of the shareholders should be considered in the dividend decision. If shareholders prefer capital gain to income for tax reasons for example, then this would suggest a policy of higher retentions would be more appropriate. **(2 marks)**
- Current loan agreements may contain restrictive covenants that may affect dividend policy – for example certain financial ratios may have to be maintained, limiting the company's ability to pay a high dividend. **(2 marks)**

Total: 6 marks

Marking guide

		Marks
3.1 (a) Forward market hedging	3	
(b) Money market hedging	4	
(c) Currency futures	4	
(d) Currency options	<u>5</u>	
		16
3.2 Economic exposure		3
3.3 To hedge or not to hedge discussion (3 marks each)		6
3.4 1 mark per relevant point		<u>5</u>
Total		<u><u>30</u></u>

Marks
3.1 (a) Forward market hedging

Only net dollar exposures after matching need to be hedged (there is no need to hedge amounts designated in sterling). Net dollar imports in six months' time are (\$1,000,000 + \$700,000 – \$500,000 =) \$1,200,000, so the company will be anxious to ensure that it is safeguarded when exchanging £ for \$ to pay for the imports.

(2 marks)

When exchanging £ for \$ the company will be offered the lower six month rate, 1.9711 (ie the worse rate for Cromwell – the \$ it needs will cost the most £). Taking out a forward contract at this rate will fix the sterling payment at:

(1 mark)

$$\frac{\$1,200,000}{1.9711} = \text{£}608,797$$

Total: 3 marks

(b) Money market hedge

To protect against any future exchange rate fluctuations, effectively Cromwell could transfer funds at the spot rate today and leave the \$ on deposit until it is required in six months' time. Cromwell would therefore borrow £ now and convert £ into dollars. Those dollars can be placed on deposit for six months to grow to \$1,200,000.

(1 mark)

Amount of \$ needed in six months = \$1,200,000

(1 mark)

Marks

Amount that would need to be placed on deposit now to become \$1,200,000 in six months =

$$\frac{\$1,200,000}{1+(0.03/2)} = \$1,182,266 \quad (\text{Note. The 3\% is the annual \$ deposit rate})$$

(1 mark)

To buy these \$ now would cost £ at the current spot rate:
 $1,182,266/1.9966 = £592,140$ (Note. \$1.9966/£ is again the worse rate for Cromwell – it costs the most £ for the required amount of \$.)

This amount has to be borrowed in sterling for six months, so the final cost is:

$$£592,140 \times (1 + 0.065/2) = £611,385 \quad (\text{Note. The 6.5\% is the annual £ borrowing rate})$$

(1 mark)

Total: 4 marks

(c) Currency futures hedge

The currency exposure arises in six months' time. To protect against foreign exchange fluctuations March futures should be sold initially as the futures price will fall if the dollar strengthens. Thus selling at a higher price initially and closing out at a lower price as the \$ strengthens will create a profit to offset against the increasing underlying cost of buying the \$ required to pay for imports. As they are traded futures with an underlying value of sterling the company contracts to sell sterling futures.

(1 mark)

6 months March futures price = \$1.9796

Number of contracts: Size of hedge = \$1,200,000/\$1.9796 so
 $£606,183/£62,500 = 9.7$ rounded up to 10 contracts required.

(1 mark)

Outcome:

$$\begin{aligned} [\text{Note. Sterling at opening spot rate} &= && \underline{\underline{£601,022}} \\ 1,200,000/\$1.9966 & \quad \quad \quad && \$1,200,000/1.9966 = \end{aligned}$$

(½ mark)

Profit on futures contracts

Initially sold at \$1.9796

Close out: \$1.9500

Bought at

Gain $\$0.0296 \times 10 \times £62,500 = \$18,500$

(1½ mark)

Due to gain, only need to translate \$1,200,000 – \$18,500 =
\$1,181,500

At future spot rate this is $\$1,181,500/1.9500 = £605,897$

Overall loss = $£605,897 - £601,022 = £4,875$

(The gains and losses do not quite match because the number of contracts does not fit exactly and because of basis risk.)

Total: 4 marks

(d) Currency options hedge	Marks
As \$ need to be purchased, Cromwell will need to buy March put options on £. (The options are traded and have an underlying value of sterling so the company must enter into an option to sell sterling, as buying \$ = selling £)	(1 mark)
The current spot rate (\$ to £) is \$1.9966/£ \$/£ Options £31,250 (cents per pound)	
To guarantee no worse an exchange rate, put options will need to be purchased at the exercise price of \$2.00/£ (Note. Closest to and above the opening spot rate.)	(½ mark)
Number of contracts: Size of hedge = \$1,200,000/\$2 = £600,000, hence £600,000/£31,250 = 19.2, ie 19 contracts required.	(½ mark)
Premium payable = 19 × 31,250 × 0.0671 = \$39,841	(½ mark)
At spot rate this amounts to 39,841/1.9966 = £19,954 paid today.	
Outcome in 6 months if the spot rate is \$1.97/£ The options would be exercised as the put option allows Cromwell to sell at \$2.0000/£ as opposed to the less favourable spot rate of \$1.9700/£, producing £31,250 per contract × 19 contracts × \$2/£ = \$1,187,500.	(1 mark)
This leaves (\$1,200,000 – \$1,187,500) = \$12,500. This must be converted at the then spot rate of \$1.97/£ = £6,345	(1 mark)
Total cost of the option route is therefore: (31,250 × 19) + £6,345 + £19,954 = £620,049.	(½ mark)
	Total: 5 marks

3.2 Economic currency exposure relates to the change in the success of a company as a result of changes in long run exchange rates affecting how competitive the company is in international markets. For example, if a company exports predominantly to the USA and the dollar generally weakens over time then the exported goods will become more expensive in dollar terms. The company could respond by cutting dollar prices to maintain volume or by holding prices and experiencing volume decreases. Either way, revenue will decrease. **(1 mark)**

Unless there are known contractual future cash flows it is difficult to hedge economic exposure as the amount and timing of the exposure is unknown. Additionally, exposure will be on-going. **(1 mark)**

Economic exposure is normally managed by trying to ensure that import and export prices are not too dependent on only one or two currencies. If activities are diversified so that many countries are traded with, there is a chance the relative strengths of the currencies will move in opposite directions. For example, with respect to sterling, the dollar might be weak but the euro might strengthen.

(1 mark)

With Cromwell, although this company appears to deal only with US companies, because there are both imports and exports, some economic exposure is reduced by a matching process: for example more expensive imports but more valuable exports. To achieve greater reductions in economic exposure, Cromwell should attempt to diversify activities into other countries.

(1 mark)

Total: 3 marks

3.3 It can be argued that hedging may not add to shareholder wealth. Over time, currency movements may be a 'zero sum' game in which gains on currency movements may be balanced by losses. In addition shareholders can effectively manage the exposure themselves by diversifying their own portfolios in line with their preferences and risk tolerance, thus avoiding the unnecessary transaction costs associated with hedging. For example, if a shareholder was diversified so that one investment exported to the euro zone and another imported, currency gains and losses would be potentially cancelled out even if there were no hedging.

(1 mark)

Also, it is argued that currency movements are a component of unsystematic risk insofar as the transactions giving rise to gains/losses on currency are specific to each firm. Therefore, hedging would not reduce the non-diversifiable (systematic/market) risk of the firm. Consequently, shareholders who hold a diversified portfolio are not helped when managers hedge and so they should be unwilling to pay a premium for such hedging activities.

(1 mark)

Hedging may therefore primarily be undertaken by managers for their own benefit rather than that of shareholders (the classic agency problem), particularly as they will not hold a portfolio of jobs (and they will seek to safeguard their single job) or if they are compensated on the basis of short-term results.

(1 mark)

However, these arguments may only be valid in a perfect capital market. In the presence of market imperfections, there is another body of opinion that firms should hedge for the following reasons:

(1 mark)

Marks

- To reduce the volatility (and, hence, risk) of a firm's cash flows caused by changes in exchange rates. This will reduce the volatility of the firm's value and help the planning and investment capabilities of the firm. (1 mark)
- To avoid financial distress (for example by additional cash outflows caused by adverse currency movements) that increases the cost of capital and which can adversely affect the ability of the firm to raise finance. This will also help the firm in its dealings with suppliers, customers and financiers and will provide assurance to all stakeholders that cash flows are being well managed. (1 mark)
- Because managers may have access to better information regarding the firm's exposure than shareholders – they have a comparative advantage in knowing the actual exposure of the firm. (1 mark)
- Hedging instruments tend to be traded on wholesale markets and some techniques of currency exposure management (operational) are only truly available at the firm level rather than investor level. (1 mark)
- A firm may be able to hedge at better prices than shareholders. (1 mark)

Total: 6 marks

3.4 Cromwell should take the following factors into account in assessing the political risk of potential overseas markets (**Note.** Only five factors are required)

- Government stability (1 mark)
- Political and business ethics (1 mark)
- Economic stability/inflation (1 mark)
- Degree of international indebtedness (1 mark)
- Financial infrastructure (1 mark)
- Level of import restrictions (1 mark)
- Remittance restrictions (1 mark)
- Evidence of expropriation (1 mark)
- Existence of special taxes and regulations on overseas investors (1 mark)

Total: 5 marks



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