

## Section A

### Question 1 Part a)

**6 marks for advantages and disadvantages, 6 marks for calculating the effects on future earnings and 6 marks for calculating the effects on the balance sheet = 18 marks in all.**

#### Part a(i):

i) A rights issue:

A rights issue is the offer of new shares by a company to its existing shareholders in proportion to their existing shareholding.

Advantages would include:

If all rights are taken up, no change in ownership.

Costs of raising equity is cheaper and less disclosures required than if "Going Public"

No obligation to pay dividends

Helps to lower the debt/equity ratio and will therefore signal to creditors that existing equity holders still have faith in company and could help to reduce the cost of credit.

Disadvantages would include:

Market for shares is illiquid, not all shareholders may wish to take up rights which will change the structure of ownership.

Can be more expensive than the two other options.

ii) Issuing convertible debentures:

Convertible debentures are a type of bond that gives the holder the right but not the obligation to convert their bonds into new equity issued by the company at a predetermined ratio.

Advantages would include:

The interest payments on such bonds would be less than on similar non-convertible bonds.

They may make an otherwise unattractive bond issue more attractive to lenders.

The loan would not need to be paid back which means that the financial resources stay in the company.

There is a widening in the number of people holding shares in the company. In fact this can be a reason in itself for issuing them.

This could make the market for its shares more liquid.

Any sinking fund which had been built up to repay the debt could be ploughed back into the company.

Disadvantages would include:

An increase in the number of shares will dilute EPS.

The increase in the number of shareholders will change the structure of ownership in the company.

If bonds are not converted they must be repaid as if they were similar non-convertible bonds.

#### Part a (ii):

Next year's profit before interest and tax = €50,000 x 120.00% €60,000

## Funds required

Increase in fixed assets	€120,000
Increase in stocks	€8,000
Increase in debtors	€6,000
increase payables	(€9,000)
	<u>€125,000</u>

## Methods

	<b>Rights Issues</b>	<b>Convertible Debentures</b>
		Costs> 9.00%
Shares	120,000 <b>prospective&gt;</b>	90,000
Funds	€150,000	€150,000
Profit before tax	€60,000	€60,000
Interest costs	<u>                    </u>	<u>(€13,500)</u>
Profit before tax	€60,000	€46,500
12.5% Corporation tax	<u>(€7,500)</u>	<u>(€5,813)</u>
	€52,500	€40,688
Dividends	<u>(€13,000)</u>	<u>(€10,000)</u>
	€39,500	€30,688
EPS	€0.101	€0.102
Shares in issue	520,000	400,000
Potential shares	<u>                    </u>	<u>90,000</u>
	520,000	490,000
Profit as above	€52,500	€40,688
interest saved		
net of tax	<u>no change</u>	<u>€11,813</u>
Post issue	€52,500	€52,500
Diluted EPS	N/A	N/A

**Part a (iii):**

**Balance Sheets after particular proposals:**

	<b>Rights Issues</b>	<b>Convertible Debentures</b>
Non Current Assets	€320,000	€320,000
Current Assets		
Inventories	€88,000	€88,000
Receivables	€66,000	€66,000
Cash	€64,500	€55,688
	<b>€538,500</b>	<b>€529,688</b>
Equity		
Ordinary share capital	€260,000	€200,000
Share Premium	€90,000	
Profit b fwd to start of year	€50,000	€50,000
Profit for the year	€39,500	€30,688
Total Equity	€439,500	€280,688
<b>Non Current Liabilities</b>		
as at start of year	€0	€0
Raised during year	€0	9% €150,000
Current Liabilities		
Payables	€99,000	€99,000
	€0	€0
	<b>€538,500</b>	<b>€529,688</b>

**Question 1 Part b)**

**1 mark for explaining trade off, and 3 \* 2 marks for explaining each approach = 7 marks in all.**

Current ratio shows the excess of current assets over current liabilities. A high current ratio might be good for creditors but is expensive for the company in terms of locking up valuable and costly resources. Liquid assets such as stock, debtors or even cash in the bank has to be financed yet generally do provide little if any return.

Conversely long term assets do generally produce profits but are not liquid. This therefore causes firms to have to make a decision in relation to their allocation of resources. This trade-off between liquidity and profitability leads to an approach to working capital that can be characterised as “conservative” / “prudential” or “matching” / “hedging” or “aggressive”.

The Managing Director is recommending a conservative approach. This would involve financing all the fixed and permanent current assets and a proportion of the temporary current assets out of long term funds. While this is of low risk, as the current ratio is quite high, the use of expensive long term liabilities rather than less expensive short term liabilities is costly to the firm in terms of lost profitability.

The Finance director is recommending a more matched or hedged approach. This would quite simply involve matching all the fixed and permanent current assets out of long term funds and all the temporary current assets out of current liabilities. While this is of slightly higher risk, as the current ratio is quite high, the use of less expensive short term liabilities rather than more expensive long term liabilities is less costly to the firm in terms of lost profitability.

The aggressive approach as advocated by the Sales Director would involve financing some of the fixed assets, possibly all the permanent and all the temporary current assets out of its current liabilities, i.e. its short term funds. This is of a much higher risk, particularly at the moment when securing any form of finance is difficult and “rolling over” debt not proving easy. However as the current ratio is high, the use of less expensive short term liabilities rather than more expensive long term liabilities is the least costly to the firm in terms of lost profitability.

**Question 2 Part a)**

**2 marks for E(r) and St. Dev. and 2 marks for discussion = 4 marks in total**

**The weighted average expected return of the merged group.**

AML = A and BGL = B

$$E(R_{\text{Group}}) = (X_A \cdot r_A) + (X_B \cdot r_B)$$

Where:  $X_A = .3$  and  $X_B = .7$ ;  $r_A = 10\%$  and  $r_B = 16\%$

$$\text{Thus } E(R_{\text{Group}}) = (0.3 \times 10) + (0.7 \times 16) = 3 + 11.2 = \mathbf{14.2\%}$$

**The standard deviation of the merged group (= the total risk of the merged group) =**

$$\sigma_P = \sqrt{\{(X_A^2 \cdot \sigma_A^2) + (X_B^2 \cdot \sigma_B^2) + 2(X_A \cdot X_B \rho_{AB} \cdot \sigma_A \cdot \sigma_B)\}}$$

Where:  $X_A = 0.3$      $X_B = 0.7$      $\sigma_A = 15$      $\sigma_B = 20$  and  $\rho_{AB} = 0$

$$\text{Thus } \sigma_P = \sqrt{\{(0.3)^2 \times 15^2\} + \{(0.7)^2 \times 20^2\} + 2\{(0.3 \times 0.7 \times 0 \times 15 \times 20)\}} = \mathbf{14.7}$$

Before the merger BGL has a return of 16% and a St. Dev. of 20

The merged group would have a return of 14.2% and a St. Dev. of 14.7

Thus the merged group has a lower risk but a lower return than BGL.

Therefore one cannot say unambiguously that the merged group is superior to BGL.

But since the management of BGL would consider the merger a success if the groups expected return and risk was similar to what AML enjoys now, (it has fallen from 20% to 14.7% as opposed to AML's 15%), and thus it exceeds the expectations of BGL management and could be recommended to them.

Before the merger AML has a return of 10% and a St. Dev. of 15

The merged group would have a return of 14.2% and a St. Dev. of 14.7

Thus the merged group has a higher return and a lower risk than AML.

Therefore one can say unambiguously that the merged group is superior to AML.

Therefore it meets the objectives of AML and could be recommended to its management.

**Question 2 Part b)****3 marks for the E(r)'s and 2 marks for discussion = 5 marks in total**

$$\begin{aligned}\beta_p &= (X_A \cdot \beta_A) + (X_B \cdot \beta_B) \\ &= (0.3 \times 0.8) + (0.7 \times 1.5) = 0.24 + 1.05 = 1.29\end{aligned}$$

$$\begin{aligned}\text{CAPM: } E(R_{\text{Group}}) &= r_f + \beta_p (E(r_m) - r_f) \\ &= 2 + 1.29(12 - 2) = 2 + 1.29(10) = 2 + 12.9 = 14.9\%\end{aligned}$$

$$\begin{aligned}E(R_{\text{AML}}) &= r_f + \beta_A (E(r_m) - r_f) \\ &= 2 + 0.8(12 - 2) = 2 + 0.8(10) = 2 + 8 = 10\%.\end{aligned}$$

$$\begin{aligned}E(R_{\text{BGL}}) &= r_f + \beta_B (E(r_m) - r_f) \\ &= 2 + 1.5(12 - 2) = 2 + 1.5(10) = 2 + 15 = 17\%\end{aligned}$$

Using the CAPM the merged group would have an expected return of 14.9% and a beta of 1.29

Using the CAPM before the merger AML has an expected return of 10% and a beta of 0.8.

Using the CAPM before the merger BGL has an expected return of 16% and a beta of 1.5

Unlike using the standard deviation to calculate risk, with the CAPM the group beta is a simple weighted average of the individual betas. Hence there is no "benefit" to diversification as investors are assumed diversified anyway.

With the merger, shareholders in AML will trade a higher return (14.9 instead of 10) for a higher risk (1.29 instead of 0.8). So we cannot say unambiguously whether the merger is beneficial or not to AML.

With the merger, shareholders in BGL will trade off a lower return (14.9 instead of 17) for a lower risk (1.29 instead of 1.5). So similarly for BGL, we cannot say unambiguously whether the merger is beneficial or not.

**Question 2 Part c)**

**4 marks for discussion and 6 marks for diagram = 10 marks in total**

CAPM:  $E(R_{AML}) = 10\%$  and the expected return for AML = 11%

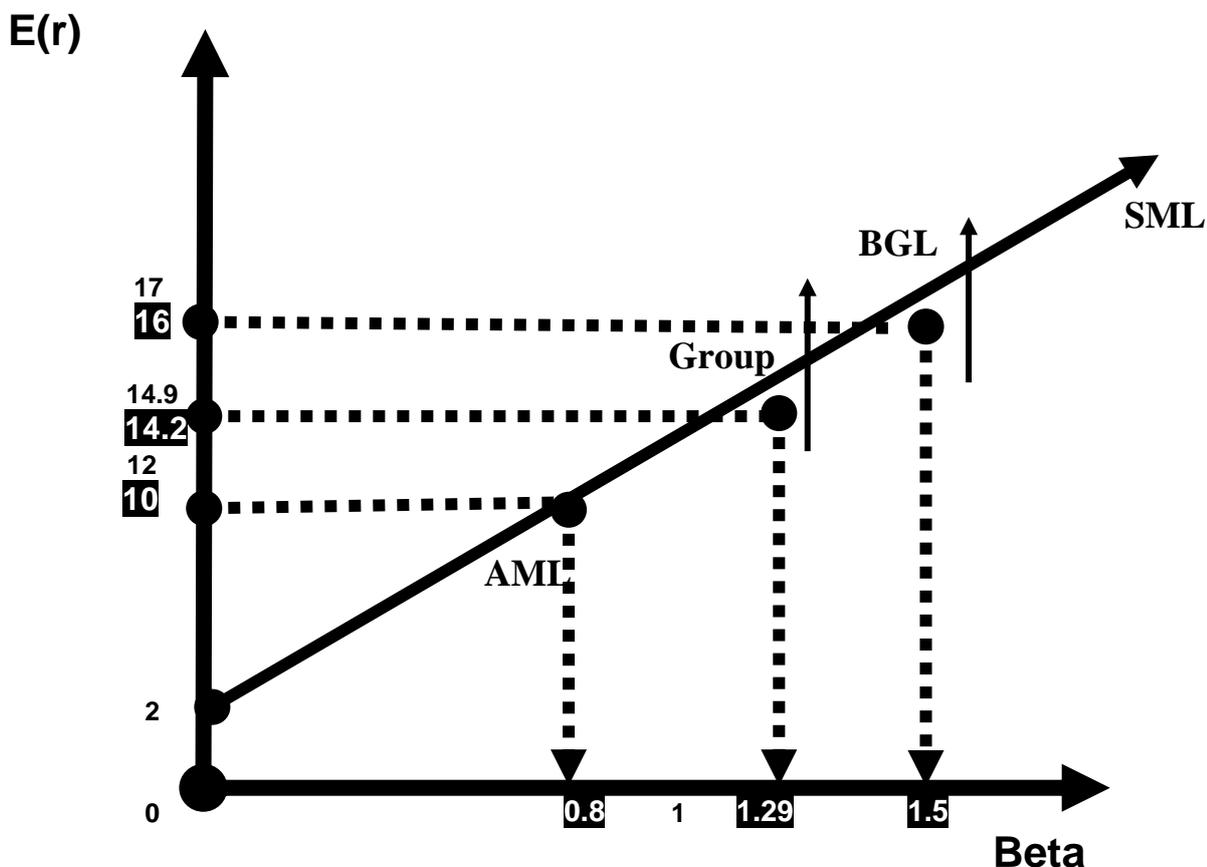
Using beta as a measure of risk, the return AML are receiving is correct. AML has an expected return of 10% and given their risk CAPM would expect a return of 10%. Hence according to CAPM it is correctly priced. If CAPM holds in the long run, AML's price stay the same and therefore its return should not change either.

CAPM:  $E(R_{BGL}) = 17\%$ . But expected return for BGL = 16%

Using beta as a measure of risk, the return BGL are receiving is too low. AML has an expected return of 16% but given their risk CAPM would expect a return of 17%. Hence according to CAPM it is overvalued. If CAPM holds in the long run, BGL's price should fall and its return should rise.

CAPM:  $E(R_{Group}) = 14.9\%$  But expected return for the Group = 14.2%

Using beta as a measure of risk, the return in the combined group is too low. The combined group has an expected return of 14.2% but given its risk CAPM would expect a return of 14.9%. Hence according to CAPM the combined group is overvalued. If CAPM holds in the long run, the combined group's price should fall and its return should rise.



### **Question 2 Part d)**

**The strategic issues that arise from pursuing growth through mergers and acquisitions.**

**1.5 marks for each strategic issue on M & A, max 4 = 6 marks in total**

A company pursuing a policy of growth through mergers and acquisitions should take account of the following strategic issues:

- Time - mergers or acquisitions allows a firm to increase its market share or enter a new market more quickly than might be incurred if the firm tried to expand organically. As “time is money”, the ability to enter a market or increase market share fast by mergers or acquisitions could be the cheapest way to expand.
- Cost – cost savings could be achieved by mergers or acquisitions due to synergy. Alternatively due to a “premium for control”, acquisitions might be the most expensive way to expand. This may be particularly true if it is resisted by the directors of the target company or the government under the terms of competition legislation. However at least acquisitions can be made by means of share exchange unlike organic growth which requires funding in cash.
- Regulation / legislation / culture – mergers or acquisitions can allow for an easy entry into a market, particularly a foreign market where organic growth would be forbidden / restricted / meet local opposition. Alternatively organic growth is unlikely to result in referral to competition authorities while mergers or acquisitions often do. Similarly the customers / government may not appreciate the new (foreign) owners.
- Assimilation - Mergers and acquisitions can lead to quicker entry into a new market but it could also lead to problems of assimilating new employees and new operating systems. Likewise staff need to assimilate an increasing range of products, suppliers, customers and markets. This can lead to a large strain on staff at all levels but particularly management and lead to “corporate indigestion” mentioned earlier.
- Strategy - mergers and acquisitions will be most successful when they allow the strategic objectives of the firm to be achieved at a lower cost and / or faster than would they be by organic growth. Mergers and acquisitions are probably only desirable if organic growth alone cannot achieve the strategic objectives that a company has set itself. However their purpose should be to increase long term shareholder wealth and not just short term profits.

### Question 3 Parts a(i) and a(ii)

6 marks for calculations, 4 marks for assumptions = 10 marks in all.

When using the CAPM model for international investments it is necessary to take into account if the relevant local capital market operates barriers to the free movement of capital and hence is segmented and or allows for the free movement of capital and hence is integrated. While North Zarcky definitely was segmented it may be less now. However not all barriers are to be removed and so it would be prudent to consider the market as segmented.

Therefore we should use local rates when calculating the cost of Equity and the WACC. Thus for North Zarcky we should use its risk free and market returns rates and we should use the North Zarcky equivalent industry equity beta, as it best reflects the risk of the investment, in theory.

Thus the cost of equity in North Zarcky:

$$\text{CAPM: } K_e = r_f + \beta (E(r_m) - r_f) = 5\% + 1.6(15\% - 5\%) = 5\% + 16\% = 21\%$$

$$\text{WACC} = k_e \frac{E}{E + D} + k_d (1 - t) \frac{D}{E + D}$$

Thus the WACC in North Zarcky:

$$21\% \times 0.60 + 10\%(1 - 0.38) \times 0.4 = 12.6\% + 6.2\% \times 0.4 = 12.6\% + 2.8\% = 15.4\%$$

When using the CAPM model for international investments if the relevant local capital market does not greatly restrict the free movement of capital it is integrated and hence the World average rates should be used.

Therefore for the USA we should use World average rates when calculating the cost of Equity and the WACC. Thus for the USA we should use World average risk free and market returns rates and we should use the World average equivalent industry equity beta, as it best reflects the risk of the investment when the local market is integrated.

Thus the cost of equity in the USA:

$$\text{CAPM: } K_e = r_f + \beta (E(r_m) - r_f) = 2\% + 1.2(11\% - 2\%) = 2\% + 10.8\% = 12.8\%$$

As all the necessary finance for the projects would be raised in the relevant local capital market the USA's cost of debt and corporate tax rate can be used here. However it would not be inappropriate for Matcorn to use world rates either, so both possibilities are shown here.

WACC in the USA using the USA's cost of debt and corporate tax rates:

$$12.8\% \times 0.60 + 6\%(1 - 0.30) \times 0.4 = 7.68\% + 4.2\% \times 0.4 = 7.68\% + 1.68\% = 9.36\%$$

OR: WACC in the USA using the World Average cost of debt and corporate tax rates:

$$12.8\% \times 0.60 + 8\%(1 - 0.32) \times 0.4 = 7.68\% + 5.44\% \times 0.4 = 7.68\% + 2.176\% = 9.856\%$$

### **Question 3 Part b)**

**4 marks for practical and/or theoretical reasons = 4 marks in all.**

When using the International CAPM it is assumed that the investor is well diversified internationally. This is often not the case. It is common for investors to invest a higher proportion of their funds in their own domestic market than would be the case if they were truly internationally well diversified.

We have assumed above that one market (North Zarcky) was perfectly segmented and the other (the USA) was perfectly integrated. In reality a country's financial markets usually lies somewhere between these two possible extremes. Therefore we must accept a degree of inaccuracy in our calculations to allow for this.

We have used average equity betas for the each investment. This assumes that the debt/equity ratio we have used is equivalent to those in the equivalent sector. If the debt/equity ratio of Matcorn differs from that in the equivalent sector then we must firstly ungear the sector beta and then regear the beta to allow for Matcorn's gearing so as to allow for the financial risk for Matcorn.

### **Question 1 Part c)**

**4 marks for comments on appropriate discount rate and 2 marks for application to question = 6 marks in total.**

Whether for international or domestic investment projects, only firms with no debt in their capital structure should use the cost of equity to discount project cash flows, and only those projects that are very similar to a firm's existing assets should be discounted using that rate. As international investment projects tend to be different in terms of risk than domestic investments then it may not be appropriate to use the company's cost of equity. Firms with both debt and equity should use the WACC as long as they are evaluating a project that is similar to their existing assets.

When a firm is making an investment that is very different from its existing investments, then it should not use the company's cost of equity or its WACC. An alternative such as Adjusted Present Value, APV, may be used when considering an international investment project. The firm would have to calculate the base case NPV for each project. Then it would need to calculate the ungeared equity beta. Finally it would have to discount the financing side effects by an appropriate discount rate that would allow for the risk of each of the individual financing side effects.

The cost of debt or the cost of retained profit is never appropriate for use a discount rate.

As we have seen above a project specific cost of capital should be used. One must look at both the opportunity cost of funds and the risk of the project to decide the appropriate cost of capital for such projects. Matcorn's choice of discount rate will be dependent on its source of funds. While the leverage of individual international investments can be very different from its domestic levels, what is important to shareholders and creditors is maintaining a acceptable overall group debt/equity ratio.

**Question 4: part a)**

**Why the combining of the roles of the Chairman and the Chief Executive is considered undesirable.**

**1 mark for role of the Chairman, 1 mark for role of the CEO and 4 mark for why it's inappropriate to combine roles = 6 marks in all.**

The role of the Chairman is to act as the leader of the board of directors and to be responsible for the successful carrying out of the policies set by the board. The Chairman has the most important role in external relations with all the stakeholders and investors in the company.

As a direct employee of the company, the Chief Executive Officer (CEO) is the highest ranking executive director. The CEO is therefore personally accountable to the board for both all decisions made by all the executive management and the results of those decisions.

Thus these two positions are the most dominant on the board of directors. Should these two positions be held by the same person then that person could have such a powerful influence on decision-making that other board members would not feel comfortable to confront or call to account such a strong director. Likewise it may also be easier said than done for all aspects of an issue to be well thought-out before decisions are made.

Should the dominant director also play a key role in selecting non-executive directors, these NEDs may feel compromised in vigorously offering the challenge needed for long-term success. It would not be unreasonable to suspect that maximising shareholder value might be sacrificed and that they might manage the company for their own personal benefit rather than in the interests of all shareholders. Many examples of Poor corporate governance that led to the setting up of the Cadbury Committee were in companies run by domineering chairmen and chief executives, such as Asil Nadir (Polly Peck) and Robert Maxwell (Mirror Group).

Reasons given by listed companies for defying the code include that given by Morrisons in the UK, that basically no one understood the supermarket business better their CEO who they also made chairman. While that was somewhat acceptable while the group was performing strongly once the results began to slip this blatant breach of the Combined Code was no longer deemed acceptable and the company followed the code and separated out the roles of CEO and Chairman to two different people.

**Question 4 Part b:**

**3 marks for main provisions, 3 marks for explaining its approach and 3 marks for comparison with UK and Irish approach = 9 marks in all.**

The Sarbanes-Oxley (SOX) Act was enacted in the USA in 2002 in response to a number of high profile corporate frauds, some perceived as having occurred with the assistance of the company's auditors. The act makes specific demands on any company listed in a US stock exchange, (even non-US companies). There is then a range of legal sanctions that can be applied to companies that fail to act in accordance with it.

## Main Provisions of Sarbanes-Oxley Act 2002

- All CEO's and CFO's must attest to the truth and accuracy of their financial statements;
- Rules on insider dealing have been strengthened;
- Disclosure of off balance sheet transactions;
- Penalties including repayment of bonuses if accounts restated;
- Companies not able to obtain a listing on a US stock exchanges unless they not have an audit committee;
- The audit committee to comprise only independent directors;
- Compulsory rotation of audit partners;
- Restrictions on the types of non-audit work that can be carried out by auditors on the companies they audit;
- The creation of an independent Public Companies Oversight Board to oversee public company audits.

The UK has chosen to set out principles of corporate governance, often summarised as "comply or explain". Companies are encouraging compliance and asking for explanations. The Combined Code was brought in response to similar if lesser examples of corporate fraud in the UK. It now forms part of the Listing Rules for companies on the LSE. It requires all companies quoted on the main listed market to comply with the Combined Code as far as is reasonable in their circumstances and to the extent to which they do so not explanations must be given. Quoted companies not on the main listed market are also expected to follow the guidelines.

Common links in many of the corporate scandals on both sides of the Atlantic were:

- Ignoring or suspension of ethical codes, behaviour and culture;
- Questions on the effectiveness and independence of non-executive directors;
- Questions on the effectiveness and independence of auditors;
- Too much power in too few hands;
- A failure in risk management.

Only time will tell which approach will be more effective to deal with these issues. The 'comply or explain' approach is considered more flexible and allows for compliance levels to increase over time in response to a changing climate of corporate best practice. Codes of best practice can respond quicker to changing circumstances and concerns than a legislative approach and are more likely to have a greater effect in changing ethical codes, behaviour and culture.

It is without question that the voluntary codes and the legal sanctions both criminal and financial will help to reduce corporate fraud. However, already both the 'comply or explain' approach and the legislative approach are said to have led to a 'box-ticking attitude'. Unfortunately we have seen too often that no amount of legislation or voluntary codes will prevent immoral behaviour such as fraud or theft. As shareholders seek out the best and brightest to run their companies, these people will always have the ability, (if not the inclination), to circumvent these changes imposed upon them.

### Question 5 Part a)

**2 marks for discussion and 4\*1.25 mark for examples = 7 marks in all.**

An LBO is the acquisition of a company financed by large amounts of debt. Typically, the company is taken private after the LBO. The group, which takes over the company, will usually be a partnership of investors. When the management of the company leads this group it is termed a management buyout (MBO).

The main motive force is the incentives created by leverage. An LBO appears to make a company much more efficient and the managers and employees work harder, as they have to generate cash to service the debt. Typically, managers are also given incentives through ownership of the company.

Answers should outline the potential effects of a leveraged buyout (LBO) on FOUR of the various stakeholder groups in a firm as listed by Arthur D. Sharplin (Strategic management) as follows.

- Common (equity) shareholders
- Preferred shareholders
- Trade creditors
- Holders of unsecured debt securities
- Holders of secured debt securities
- Intermediate (business) customers
- Final (consumer) customers
- Suppliers
- Employees
- Past employees
- Retirees
- Competitors
- Neighbours
- The immediate community
- The national society
- The world society
- Corporate management
- Organisational strategists
- The chief executive
- The board of directors
- Government
- Special interest groups

Effects on relevant stakeholders

The incumbent shareholders:

- can make huge gains in the market as their share price can increase dramatically.

The incumbent holders of unsecured debt securities:

- as the leverage increases the risk of the firm going bankrupt increases. Hence the risk to incumbent holders of unsecured debt securities increases.

Past employees / Retirees

- as the risk of the firm going bankrupt increases, the risk to past employees / retirees losing their pensions may increase.

The incumbent managers:

- if it is an MBO there should be a reduction in agency costs as the managers will have a much larger stake in the firm and a much larger incentive to maximise return
- if it is not an MBO then the potential new owners may use new managers and replace the current managers

The incumbent workers in / suppliers to the firm:

- Due to large interest payments the new management may be forced to cut back on “waste and inefficiency” and make the highly leveraged company “lean and mean”. Hence they will be looking for savings in wages and / or staff numbers and / or the cost of supplies.

The Government:

- Part of the value created by leverage comes from the reductions in tax due to higher interest payments.

Empirical evidence supports the view that LBOs and MBOs make the companies more efficient and create value and not just transfer wealth from one group of stakeholders to another.

### **Question 5 Part b)**

**6 marks for discussing failures in takeovers, 2 for discussing actual empirical examples / empirical studies = 8 marks in all.**

It is widely reported that the level of failures in corporate acquisitions is high. Candidates are required to discuss the reasons for such a high failure rate and their answer should refer to examples of such ‘failed’ mergers and acquisitions.

Based on the most recent survey in this area, the leading reasons that so many deals in the past have failed are now widely known

Point should include the following:

- Not anticipating foreseeable events
- Paying too much for the acquisition
- Principal agent reasons, (managerial empire building)
- Not achieving the synergies anticipated
- General economic conditions or external events
- Incompatible cultures.

### **Question 6 Part a)**

**Option contracts and how they are used to hedge a position.**

**3 marks for option contracts, 2 marks for how they are used to hedge a position = 5 marks in all.**

A hedge is an investment position intended to offset potential losses/gains that may be incurred by a companion investment. In simple language, a hedge is used to reduce any substantial losses/gains suffered by an individual or an organization.

A hedge can be constructed from many types of financial instruments, including stocks, exchange-traded funds, insurance, forward contracts, swaps, options, many types of over-the-counter and derivative products, and futures contracts.

A key feature of an option as a hedging tool is that it provides protection against adverse price risk (an investor has the right to exercise the option if price changes make it optimal to do so) without having to forfeit the right to profit if the price on the underlying commodity moves in the investor's favour (in which case, the investor allows the option to expire unexercised).

Options grant the right but not the obligation to buy or sell in the future a contract at a fixed price, which is called the strike price. Unlike using futures to hedge, hedging with options offers more possibilities for the holders of an option. They may lose their investment in the option when the price moves against them, but when the price moves in their favour they can let the option expire and take advantage of the favourable market price. Therefore the eventual result of option hedging can vary much more than when hedging with futures.

There are costs involved in obtaining an option. The price for an option is called a premium and is based on intrinsic and time value. The intrinsic value is the difference between the strike price and the underlying asset's market price. This will be the profit made by exercising the option or offsetting the option. The time value is determined by the possibility of the price increasing over time. When the maturity date of an option draws near, it becomes more unlikely the price will make significant changes and thus the time value decreases.

The premium of an option can influence the decision to hedge a commodity using options and how and when the hedge will be placed. Similar to hedging with futures, hedging with option also offers two positions a hedger can occupy, which is either long or short. And just like futures, the basis can play an important part in the final price paid for a commodity.

A long position in option hedging gives the holder of the call the right but not the obligation to buy a futures contract. A holder of a long position expects the price of the futures contract to rise, thereby exercising the option and obtaining the futures contract at the lower strike price, or gaining the profit from offsetting his position.

Short hedging with the use of option is mostly implemented by producers, who want to ensure themselves of a profitable price upon the delivery date. Therefore they will obtain a put with a favourable strike price.

The use of options as a hedging tool is not to make additional profits, but to limit potential losses.

### **Question 6 Part b)**

**Financial future contracts and how they are used to hedge a position.**

**3 marks for Financial future contracts, 2 marks for how they are used to hedge a position = 5 marks in all.**

A futures contract is a derivative product that is a type of forward but traded on a futures exchange. It is generally used, like a forward contract to reduce risk. It can though be used to take on risk. This would be speculation! It is as a standardised arrangement between two parties today to buy or sell an asset at a particular time in the future for a particular price agreed today. The difference between a forward and a future contract is like that between buying a made to measure suit and buying “ready-to-wear” (or “Prêt-à-porter” as they say in France). The advantage of buying “made to measure is a perfect fit. The disadvantage is the price you pay for this. The advantage of a futures contract is that it is comparatively cheaper and this may outweigh the fact that it may not be a perfect fit.

It is not necessary that the underlying asset to a futures contract be a traditional “real” commodity. For financial futures, the underlying asset can be an intangible assets or referenced items such as stock indexes and interest rates. Futures for currencies, securities or financial instruments are all traded on futures exchanges.

Like a forward contract, a futures contract can be used to counterbalance risk exposure. It can limit any adverse change in the value of the underlying asset. In theory a futures contract can be used to hedge a position perfectly and completely remove all risk. In reality this is it is difficult to achieve a perfect hedge. They are therefore used not to completely eliminate but to reduce risk as much as possible. The price of a future contract is determined by the equilibrium between the supply and demand for them. This comes about through the competing buy and sell orders on an exchange at a particular time.

The party agreeing to buy the underlying asset in the future assumes a long position, and the party agreeing to sell the asset in the future assumes a short position. If you know that you will be making a purchase in the future of a certain asset, you should take a long position in a futures contract to hedge your position. For example, suppose that you know that in 3 months’ time you will have to buy US dollars to pay a supplier. By buying the futures contract today, you can lock in the price offered on the futures exchange today for dollars in three months’ time, (or thereabouts if not a perfect hedge). This reduces your risk because you will be able close your futures position and buy the US dollars you will need in three months at the price agreed today.

If you know that in the future you will be selling a certain asset, you should take a short position in a futures contract to hedge your position. For example, suppose that you know that in 3 months’ time you must sell US dollars you will make from an export sale. By selling the futures contract today, you can lock in the price offered on the futures exchange for the euro-dollar exchange rate in three months’ time, (or thereabouts if not a perfect hedge). This reduces your risk because you will be able close your futures position and sell the US dollars you will receive in three months at the price agreed today.

Thus the uncertainty about the future price of an item is reduced which makes trading easier. Futures contracts can be very useful in limiting the risk exposure that an investor takes on in business. The main advantage of participating in a futures contract is that it removes or reduces risk by locking in the price of whatever you are buying or selling.

**Question 6: Part c)**

**The advantages of using currency swaps.**

**1 mark for explanation, 1 mark for each advantage, max 4 = 5 marks in all.**

**Note: if explanation of a currency swap given in part (d) then 1 mark for each disadvantage, max 5 = 5 marks in all.**

A currency swap is the exchange of obligations to repay a loan in one currency for another on a notional loan.

Advantages:

Often a corporate financial manager has a relative funding advantage in one country over another. By using arbitrage, it may be possible to secure cheaper finance than by borrowing directly in the other country.

Where it is not possible for the corporate financial manager to borrow directly in a currency, currency swaps may secure finance in that currency. This could be because of not having a credit rating in that market.

They might help to circumvent foreign exchange controls or financial or government restrictions.

With a currency swaps a corporate financial manager can hedge foreign exchange risk, often for longer periods than would be possible using the forward market.

Even when it possible to obtain them, using long term forwards is typically more expensive than using currency swaps.

They may allow the corporate financial manager to restructure the debt profile of the company while not having to actually issuing or redeeming debt.

**Question 6: Part d)**

**The disadvantages of using currency swaps:**

**1 mark for explanation, 1 mark for each disadvantage, max 4 = 5 marks in all.**

**Note: if explanation of a currency swap given in part (c) then 1 mark for each disadvantage, max 5 = 5 marks in all.**

A currency swap is the exchange of obligations to repay a loan in one currency for another on a notional loan.

Disadvantages:

As a currency swap is an exchange of obligations, if the counterparty defaults the corporate financial manager's firm may be obliged to continue to make the original payments in the original currency. It is therefore usually less risky for the corporate financial manager to arrange the currency swap with a bank than with another corporate body, however even banks are not immune to failure. This is often referred to as "counterparty risk"

A currency swap can be on a notional fixed loan in one currency to a floating loan in the other or both could be fixed or both floating. With a floating to floating swap if the two floating rates are not pegged to the same index then what is often referred to as “basis risk” may be present.

Also because the corporate financial manager is obliged to make the payments on the swap, sometimes, due to favourable currency movements, you would have been better off not swapping than swapping. This is often referred to as “exchange rate risk”.

It may not be possible to continue to exchange currency obligations due to changes in economic policy in a country. This is often referred to as “sovereign risk”.

Where the currency swap is undertaken for hedging rather than speculative reasons, unless it is a perfect hedge there can be “residual risk”.

#### **Question 6 Part e)**

**The difference between transaction and translation risk in international trade.**

**2 marks for transactions risk, 2 marks for translation risk and 1 mark for contrast = 5 marks in all.**

Transactions risk is that exposure to exchange rate risk faced by a firm that is vulnerable to an adverse change in the value of any of its cash flows as a result of exchange rate movements. Almost every firm is exposed to exchange rate risk to some degree, even if it operates strictly in one country and has cash flows in only one currency. Such a firm will face exchange rate risk if (1) it produces a good or service that competes with imports in the home market, or (2) it uses as a production input an imported product or service. This exchange rate risk cannot be eliminated, but it can be hedged (transferred to a third party) using financial contracts.

Translation and economic risks relate to those additional complexities involved with operating internationally if they have affiliates or subsidiaries on the ground in a foreign country. One such complication arises when MNCs translate costs and revenues denominated in foreign currencies to report on their financial statements, which, of course, are denominated in the home currency. This type of risk is called translation exposure or accounting exposure. In other words, foreign exchange rate fluctuations affect individual accounts in the financial statements.

**Question 6 Part e)**

**The difference between economic risk and political risk in international trade.**

**2 marks for economic risk, 2 marks for political risk and 1 mark for contrast = 5 marks in all.**

Economic risk is the chance that changes in macroeconomic conditions like exchange rates, will affect an investment, usually one in a foreign country. It includes the overall impact of foreign exchange rate fluctuations on the firm's value. A firm faces economic risk when exchange rate changes affect its cash flows, even those cash flows not specifically tied to transactions in other currencies. What can managers do about these risks? MNCs manage their economic risks both by using sophisticated currency derivatives and by matching costs and revenues in a given currency.

Economic risk is one reason international investing carries more risk than domestic investing. Economic risk may also add opportunity for investors.

For investors, political risk can simply be defined as the risk of losing money due to changes that occur in a country's government or regulatory environment. Acts of war, terrorism, and military coups are all extreme examples of political risk. Expropriation of assets by the government – or merely the threat – can also have a devastating effect on share prices. Political risk is also known as "geopolitical risk," and becomes more of a factor as the time horizon of an investment gets longer.

Unlike economic or financial variables, political risk is more difficult to quantify. While it is possible to calculate political risk "scores" or other quantitative-looking benchmarks, it's important to remember that these are ultimately based on qualitative judgments. As with other kinds of risk, the only tried and true method for mitigating political risk is diversification.