

CIMA F3 Workbook Questions & Solutions

Lecture 1

Organisational Strategy

Shareholder Wealth - Illustration 1

Year	Share Price	Dividend Paid
2007	3.30	40c
2008	3.56	42c
2009	3.47	44c
2010	3.75	46c
2011	3.99	48c

There are 2 million shares in issue.

Calculate the increase in shareholder wealth for each year:

- II. Per share
- III. As a percentage
- IV. For the business as a whole

Solution

Year	Share Price	Share Price Growth	Div Paid	Increase in S'holder Wealth	As a Percentage	Total Shareholder Return
2007	3.30		40c			
2008	3.56	$(3.56 - 3.30) = 26c$	42c	$(26 + 42) = 68c$	$(68 / 330) = 20.6\%$	$2m \times 68c = \$1.36m$
2009	3.47	$(3.47 - 3.56) = -9c$	44c	$(-9 + 44) = 35c$	$(35 / 356) = 9.8\%$	$2m \times 35c = \$0.70m$
2010	3.75	$(3.75 - 3.47) = 28c$	46c	$(28 + 46) = 74c$	$(74 / 347) = 21.3\%$	$2m \times 74c = \$1.48m$
2011	3.99	$(3.99 - 3.75) = 24c$	48c	$(24 + 48) = 72c$	$(72 / 375) = 19.2\%$	$2m \times 72c = \$1.44m$

Objective Test Questions

1. Which of the following statements does not relate to a profit making entity?

- A. They exist primarily to increase the wealth of their shareholders.
- B. They do not tend to have non-financial objectives.
- C. They have other stakeholders besides shareholders to consider.
- D. They have to find a balance between the risks in a strategy and the rewards to shareholders.

Answer B

2. Which of the following statements relating to the 'Agency Problem' is NOT correct?

- A. The management of the organisations are the agents of the shareholders who are the principle.
- B. The problem arises where management focus on their own short term interests to the detriment of long term shareholder interests.
- C. The problem may be greater in organisations where management accountability is low and shareholders are not well informed.
- D. As management accountability increases so the agency problem increases.

Answer D

3. ABC Co. Paid out a dividend of 35c last year and 42c this year per share. Their share price has increased from \$4.33 to \$5.24 in that time. What is the percentage shareholder return in the current year.

- A. 20.00%
- B. 21.10%
- C. 30.72%
- D. 24.39%

Answer C

Increase in Share Price (4.33 to 5.24) = 91c
Dividend Paid this year = 42c
Return Per Share = 133c

As a % of previous year Share Price (133/433) = 30.72%

4. HHH Co. is a listed, multi-national entity which has recently issued a statement confirming its main non-financial objectives. Which of the objectives outlined below could be criticised for not meeting the SMART criteria?

- A. To reduce the carbon footprint of the organisation by 10% by 20X7.
- B. To ensure that customer satisfaction is the highest in the industry.
- C. To double market share within the next 5 years.
- D. To ensure that ethnic minorities make up at least 20% of the employees in the organisation within the next 3 years.

Answer B

5. Ideas Regional Hospital Trust is a publicly owned health provider being run as part of the National Health Service of Einsteinland. Recently an audit by the national regulators has highlighted 3 key problems:

- 1. The Key Performance Indicator of keeping spend per bed below \$4 was not met
- 2. An overspend of \$500,000 compared to budget on surgical gloves was discovered.
- 3. The primary target of the trust to treat all emergency patients within 1 hour was not met.

These failures are failures of:

- A. 1. Economy 2. Effectiveness 3. Efficiency
- B. 1. Effectiveness 2. Economy 3. Efficiency
- C. 1. Efficiency 2. Economy 3. Effectiveness
- D. 1. Efficiency 2. Effectiveness 3. Economy

Answer C

Kaplan Exam Kit Questions 1 - 5 and 7

Lecture 2 - Integrated Reporting I

No Illustrations, Just Objective Test Questions

1. Which of the following is NOT a valid criticism of providing financial information only rather than other information to stakeholders?
- A. Financial performance can be improved by impacting other areas of the business such as sustainability so should not be considered in isolation.
 - B. Financial statements are prepared using historic information which gives little information on likely future performance.
 - C. Financial statements focus too heavily on the future strategic direction rather than financial performance only.
 - D. Financial statements are prepared on the accruals basis and can therefore be manipulated.

Answer C

2. Integrated reporting is a way to enable investors to assess not just the financial performance of the business but to get an understanding of the current and future strategic direction of the organisation. Is this statement:
- A. True
 - B. False

Answer A

3. Which of the following statements relating to the Global Reporting Initiative (GRI) guidelines is NOT correct?
- A. The information provided relates to economic, environmental and social factors.
 - B. They provide a set of principles for the content of an integrated report as well as disclosures required.
 - C. The report can be included within the financial statements or in a separate document.
 - D. All disclosures required must be made or the entity cannot state that the report is in accordance with them.

Answer D

4. Which of the following are general disclosures required by the Global Reporting Initiative guidelines?

- A. Strategy and Analysis
- B. Stakeholder Engagement
- C. Labour Practices
- D. Governance
- E. Product Responsibility

Answer A, B, D

5. Preparation of the integrated report is a one-off exercise that is undertaken a minimum of once every three years. Is this statement:

- A. True
- B. False

Answer B (It is an ongoing process)

Kaplan Exam Kit Questions 26 - 29

Lecture 3 - Integrated Reporting II

No Illustrations, Just Objective Test Questions

1. Which of the following statements related to Integrated Reporting is NOT correct?

- A. Environmental reporting is an integral part of Integrated Reporting.
- B. Integrated Reporting is not a statutory requirement.
- C. Integrated Reporting forms part of sustainability reporting .
- D. Integrated Reporting includes information on the strategic direction of the entity.

Answer C (Sustainability reporting is part of IR not the other way round)

2. GHT Co. is a mining company that has patented several different designs for mining machinery. It uses these machines to extract better than average quantities of raw materials. These machines form part of which capital for the purposes of the integrated report?

- A. Financial
- B. Natural
- C. Intellectual
- D. Manufactured

Answer D (The machines are an asset used to produce, the patent on the machine would be intellectual capital)

3. Which of the following is NOT a stated objective of the Integrated Reporting Council's (IR) Framework?

- A. To support integrated decision making.
- B. To report more widely on performance.
- C. To increase financial statement disclosures.
- D. To enhance accountability.

Answer C

4. Which of the following are guiding principles of the Integrated Reporting Council's (IR) Framework?

- A. Stakeholder Relationships.
- B. Enhance Accountability.
- C. Conciseness.
- D. Improvement of capitals.
- E. Connectivity of information.

Answer A, C & E

Lecture 4

Performance

Measurement

Performance Analysis Illustration

	X1	X2	X3
Non Current Assets	500	700	1000
Current Assets	<u>150</u>	<u>200</u>	<u>300</u>
	<u>650</u>	<u>900</u>	<u>1300</u>
Ordinary Shares (\$1)	300	300	300
Reserves	100	280	430
Loan Notes	150	200	300
Payables	<u>100</u>	<u>120</u>	<u>270</u>
	<u>650</u>	<u>900</u>	<u>1300</u>
Revenue	3000	3500	4200
COS	2000	2400	3200
Gross Profit	<u>1000</u>	<u>1100</u>	<u>1000</u>
Admin Costs	300	350	400
Distribution Costs	200	250	300
PBIT	<u>500</u>	<u>500</u>	<u>300</u>
Interest	100	150	220
Tax	120	90	50
Profit After Tax	<u>280</u>	<u>260</u>	<u>30</u>
Dividends	100	110	30
Retained Earnings	<u>180</u>	<u>150</u>	<u>0</u>
Share Price	<u>\$3.30</u>	<u>\$4.00</u>	<u>\$2.20</u>

Using the information calculate and comment on the following Ratios:

- I. Return on Capital Employed
- II. Return on Equity
- III. Gross Margin
- IV. Net Margin
- V. Operating Margin
- VI. Revenue Growth
- VII. Gearing
- VIII. Interest Cover
- IX. Dividend Cover
- X. Dividend Yield

XI. P/E Ratio

Solution**ROCE**

		X1	X2	X3
Equity + LT Liabilities	Shares	300	300	300
	Reserves	100	280	430
	LT Loan Notes	<u>150</u>	<u>200</u>	<u>300</u>
	Capital Employed	<u>550</u>	<u>780</u>	<u>1030</u>
Non Current Assets + Net Current Assets	Non Current Assets	500	700	1000
	Net Current Assets (Current Assets - Current Liabilities)	<u>(150 - 100) = 50</u>	<u>(200 - 120) = 80</u>	<u>(300 - 270) = 30</u>
	Capital Employed	<u>550</u>	<u>780</u>	<u>1030</u>
Total Assets - Current Liabilities	Total Assets	650	900	1300
	Current Liabilities	<u>100</u>	<u>120</u>	<u>270</u>
	Capital Employed	<u>550</u>	<u>780</u>	<u>1030</u>
PBIT		500	500	300
Return on Capital Employed	PBIT / Capital Employed	$(500 / 550) = 90.91\%$	$(500 / 780) = 64.10\%$	$(300 / 1030) = 29.13\%$

	X1	X2	X3
Return on Capital Employed (ROCE)	90.91%	64.10%	29.13%
In the first year the ROCE was 90.91%. At first glance this would appear to be a good return, however without industry averages or prior period information we are unable to tell if this is the case.			
In year X2 the ROCE is 64.10%. This is a fall of 29.5% from the previous year indicating that the business is not able to make the same return on its assets that it has previously been able to do.			
In the year X3 the ROCE is 29.13%. This is a fall of 54.55% indicating that there may be some serious underlying problems which are affecting the ability of the business to generate the return on capital previously generated.			

ROE

	X1	X2	X3
Profit After Tax	280	260	30
Ordinary Shares	300	300	300
Reserves	<u>100</u>	<u>280</u>	<u>430</u>
Total	<u>400</u>	<u>580</u>	<u>730</u>
Return on Equity (PAT / Ord Shares + Reserves)	$(280 / 400) = 70\%$	$(260 / 580) = 44.8\%$	$(30 / 730) = 0.41\%$
In the first year the ROE was 70%. At first glance this would appear to be a good return, however without industry averages or prior period information we are unable to tell if this is the case.			
In year X2 the ROE is 44.8%. This is a fall of 36% from the previous year indicating that the business is not able to make the same return on the shareholders funds that it has previously been able to do.			
In the year X3 the ROE is 0.41%. This indicates that the business may be having difficulty generating the returns it was able to do previously.			

Margins

	X1	X2	X3
Revenue	3000	3500	4200
Gross Profit	1000	1100	1000
PAT	280	260	30
PBIT	500	500	300
Gross Margin (Gross Profit / Revenue)	$(1000 / 3000) = 33.33\%$	$(1100 / 3500) = 31.42\%$	$(1000 / 4200) = 23.89\%$
Net Margin (PAT / Revenue)	$(280 / 3000) = 9.3\%$	$(260 / 3500) = 7.4\%$	$(30 / 4200) = 0.7\%$
Operating Margin (PBIT / Revenue)	$(500 / 3000) = 16.66\%$	$(500 / 3500) = 14.28\%$	$(300 / 4200) = 7.1\%$

The Gross Margin is 33.33% in X1 and holds reasonably steady in X2 at 31.42%. However in X3 the Gross Margin falls to 23.89% indicating that the business has either had to cut prices to sell the greater volume it has, or the cost of it's purchases have gone up.

The Net Margin is 9.3% in X1 but begins to fall in X2 with 7.4% achieved, before falling dramatically to 0.7% in X3. The main reason for this is the fall in Gross Profit as other costs have risen in line with expectations given the increase in sales. However another point to note is that interest costs have risen with the increase in long term loans. The extra interest costs have put pressure on the business.

The Operating Margin dropped slightly in X2 to 14.28% from 16.66% the previous year - a fall of almost 15%. In X3 the Operating Margin fell away to 7.1%, a decrease of over 50%. This is due to the decreasing Gross Margin achieved as well as rises in the other expenses.

Gearing

		X1	X2	X3
Debt		150	200	300
Equity	Number of Shares	300	300	300
	Share Price	3.30	4	2.20
	Market Value	$(300 \times 3.30) = 990$	$(300 \times 4) = 1200$	$(300 \times 2.20) = 660$
Gearing (Debt / Equity)		$(150 / 990) = 15\%$	$(200 / 1200) = 16.66\%$	$(300 / 660) = 45.45\%$
<p>Gearing levels in year X1 are 15%. Without industry averages or prior year data we are unable to assess this level although at first glance it does not seem excessive.</p>				
<p>In year X2 gearing increases slightly to 16.66%, an increase of 11% from year X1. This is due to debt levels increasing to 200 from 150, although this is offset by the increase in the share price from \$3.30 to \$4.</p>				
<p>In year X3 gearing increases dramatically to 45%, an increase of over 180%. This is due to debt levels rising to 300 from 200 and the share price dropping to \$2.20 due to the deteriorating results of the business.</p>				

Interest Cover

	X1	X2	X3
PBIT	500	500	300
Interest	100	150	220
Interest Cover (PBIT / Interest)	$(500 / 100) = 5$ times	$(500 / 150) = 3.33$ times	$(300 / 220) = 1.36$ times
Interest coverage in year X1 is 5 times. Without industry averages or prior year data we are unable to assess this level although at first glance it does not seem unreasonable.			
In year X2 interest coverage falls to 3.33 times. This has occurred due to the interest charge increasing in the period while PBIT has remained constant.			
In year X3 interest coverage has decreased again to 1.36 times. This is caused by the PBIT achieved decreasing to 300 combined with the increase in the interest charge to 220. The increase in interest is caused by the increase in the long term debt of the company as shown by the gearing ratios calculated above.			

Dividend Cover

	X1	X2	X3
PAT	280	260	30
Dividends	100	110	30
Dividend Cover (PAT / Dividends)	$(280 / 100) = 2.8$ times	$(260 / 110) = 2.36$ times	$(30 / 30) = 1$ time
Dividend coverage in year X1 is 2.8 times. Without industry averages or prior year data we are unable to assess this level although at first glance it does not seem unreasonable.			
In year X2 dividend coverage falls to 2.36 times. This would not concern investors as although coverage has gone down slightly, the dividend paid this year is greater than last.			
In year X3 dividend coverage has decreased to 1 time. This is caused by the decrease in profit achieved by the company restricting the level of dividend payable. This will be of concern to investors and their concern is reflected in the fall in the share price from \$4 in year X2 to \$2.20 in year X3.			

Dividend Yield

	X1	X2	X3
Number of Shares (300 / 1)	300	300	300
Dividends	100	110	30
Dividends Per Share	$(100 / 300) = 33c$	$(110 / 300) = 36c$	$(30 / 300) = 10c$
Dividend Yield (Dividends Per Share / Share Price)	$(33 / 330) = 10\%$	$(36 / 400) = 9\%$	$(10 / 220) = 4.5\%$
The Dividend Yield is 10% in year X1. Whilst we do not have comparatives, this seems a reasonable return.			
In year X2 the Dividend Yield falls to 9%. This will not be overly concerning to investors as the increase in share price over the year will have more than made up for the slightly lower yield.			
In year X3 the Dividend Yield has fallen to 4.5% which is 50% lower than the previous year. This, combined with the fall in share price and reduced profitability will be a major concern to investors.			

P/E Ratio

	X1	X2	X3
Share Price	\$3.30	\$4	\$2.20
Profit After Tax	280	260	30
No. Ordinary Shares	300	300	300
EPS	$(280 / 300) = 93c$	$(260 / 300) = 86c$	$(30 / 300) = 10c$
P/E Ratio (Share Price / EPS)	$(330 / 93) = 3.54$	$(400 / 86) = 4.65$	$(220 / 10) = 22$
The P/E Ratio in year X1 is 3.54. We do not have industry comparatives or prior year information with which to compare this.			
In year X2 the P/E Ratio increases to 4.65. This indicates that the market expectations for this share have risen since X1 and that investors are now willing to pay 4.65 times what the business earns in a year to own the share.			
In year X4 the P/E ratio has increased dramatically to 22. This is unusual as the earnings have decreased to 12% of the previous year. The share price has fallen to reflect this, but not by as much as would be expected. This may indicate that the market feels that the results in year X3 were perhaps a one-off and that next years results will improve.			

Lecture 5 - Financial Strategy

No Illustrations, Just Objective Test Questions

1. Which of the following statements related to investments made by an entity is NOT correct?

- A. All projects with a positive NPV should be undertaken.
- B. A balance must be found between investing in projects and the liquidity of the company.
- C. Shareholders can block investment decisions by a vote at the AGM.
- D. Investment decisions can have a large impact on shareholder wealth.

Answer C

2. Which TWO of the following statements related to financing decisions are correct?

- A. Issuing debt will decrease gearing.
- B. Issuing equity will decrease gearing.
- C. Issuing debt is likely to decrease the entity's WACC.
- D. The cost of equity finance is less than the cost of debt finance.
- E. A long term project is most likely to be funded through a bank overdraft.

Answer B, C

3. Which of the following statements related to dividend decisions is NOT correct?

- A. When shareholders receive a dividend they are taxed on it in that tax year.
- B. Paying a dividend will increase shareholder wealth.
- C. The market may interpret the dividend paid to make investment decisions.
- D. The entity must have cash available to pay a normal dividend.

Answer B (The share price will drop once the dividend is paid meaning no effect on shareholder wealth)

4. Which THREE of the following statements is correct?

- A. The prevailing interest rate will have no effect on financing decisions.
- B. A weakened currency may lead to inflation.
- C. Competition authorities exist to protect shareholders.
- D. The government may intervene to prevent mergers or acquisitions.
- E. Regulatory bodies may have social objectives

Answer B, D & E

5. Lenders have many criteria for assessing credit worthiness, in relation to this which of the following statements is NOT correct?

- A. An entity with a AAA rating will pay more interest than a company with an AA rating.
- B. An entity with a higher credit rating will find it easier to raise finance.
- C. Availability of assets for security is a major factor in determining credit worthiness.
- D. Lenders will assess what the borrowings will be used for before making a decision to lend.

Answer A

Exam Kit Questions 33 - 39

Lecture 6 - Dividend Policy

No Illustrations, Just Objective Test Questions

1. Which of the following statements related to dividend policy is NOT correct?

- A. Paying a constant dividend means that dividends are falling in real terms.
- B. Paying a constant proportion of earnings means that dividends may fluctuate.
- C. Paying no dividend means the entity is having financial difficulties.
- D. An inflation linked dividend is likely to increase year on year.

Answer C

2. Which TWO of the following statements related to dividend policy are correct?

- A. A 'ratcheted' dividend policy is generally disliked by the market.
- B. The market may perceive no dividend being paid as a sign of problems in the business.
- C. If an entity pays a lower dividend than previously it is a sign of a weak business.
- D. A 'residual' policy of paying what is left after investments as a dividend reduces shareholder wealth.
- E. Paying a % of earnings as a dividend is likely to lead to fluctuations in the dividend amount year on year.

Answer B, E

3. According to Miller and Modigliani's dividend irrelevancy theory which of the following is NOT correct?

- A. Investors are indifferent between receiving a dividend or capital growth in the share price.
- B. If the company pays a dividend rather than re-invest the earnings shareholder wealth will be increased.
- C. Capital taxes and revenue taxes are assumed to be the same.
- D. Transaction costs are ignored.

Answer B

4. Which of the following statements are correct?

- A. The 'bird in the hand' argument argues that a consistent dividend policy should be applied.
- B. The 'clienteles effect' refers to the conclusion drawn by the market based on the dividend paid by the entity.
- C. A scrip issue is a dividend payment in shares instead of cash.
- D. A share re-purchase scheme is likely to reduce the gearing of the entity.

Answer C

5. A share re-purchase scheme is often viewed negatively by the market as it may be perceived that management has 'run out of ideas' and is therefore returning cash to shareholders. Is this statement:

- A. True
- B. False

Answer A

Kaplan Exam Kit Questions 105 - 112

Lecture 7 - Impact of Financial Strategy

Illustration 1

ABC Co.	X3
Statement of Financial Position	
Non Current Assets	1000
Current Assets	<u>300</u>
	<u>1300</u>
Ordinary Shares (\$1)	300
Reserves	630
Loan Notes	100
Payables	<u>270</u>
	<u>1300</u>
Statement of Profit or Loss	
Revenue	4200
COS	3200
Gross Profit	<u>1000</u>
Admin Costs	400
Distribution Costs	300
PBIT	<u>300</u>
Interest	10
Tax	50
Profit After Tax	<u>240</u>

ABC Co. is undertaking a new project and needs to raise an additional \$100m in capital. It intends to do this by issuing 5 year 12% bonds. Profit Before Interest & Tax will remain constant for one year while the new project is implemented.

What is the current interest cover and the gearing (Debt / Debt + Equity on book value) and what is expected to be in the next set of financial statements?

Solution

Current Levels		
Interest Cover	$(300 / 10)$	30 times
Gearing	$(100 / (100 + 930))$	9.7%
After Debt Issue		
Interest Cover	$(300 / (10 + (100 \times 12\%)))$	13.63 times
Gearing	$(200 / (200 + 930))$	17.7%

Illustration 2

ABC Co. is considering the acquisition of a competitor business CD Co. and requires \$400m in finance in order to achieve this. They have valued CD Co. at \$430m.

They are considering whether to fund the acquisition through debt or through issuing new shares (current share price \$3.25).

ABC is currently financed through share capital (\$1 shares) of \$1,200, retained earnings of \$750 and long term debt of \$750m.

(i) Calculate the gearing ratio (debt/(debt + equity)) on book value for ABC Co.:

- Before the acquisition.
- Post acquisition assuming debt is used to fund the purchase.
- Post acquisition assuming equity is used to fund the purchase.

(ii) Calculate all of the above using the market value of equity.

Solution (i)

Pre - Acquisition Gearing on Book Values		
Equity Value	(1,200 + 750)	1,950
Debt Value		750
Gearing	(750 / (750 + 1950))	28%

Post - Acquisition Gearing on Book Values if debt finance used		
Original Equity Value		1,950
Synergies Acquired	Acquisition price was \$400 but worth \$430 so equity will increase by \$30	<u>30</u>
Total Equity Value		1,980
Original Debt Value		750
New Debt Issued		<u>400</u>
Total Debt Value		1150
Gearing	(1150 / (1150 + 1980))	37%

Post - Acquisition Gearing on Book Values if equity finance used		
Original Equity Value		1,950
Value of CD		<u>430</u>
Total Equity Value		2,380
Original Debt Value		750
Gearing	$(750 / (750 + 2380))$	24%

Solution (ii)

Pre - Acquisition Gearing on Market Values		
Equity Value	$(1,200 \times 3.25)$	3,900
Debt Value		750
Gearing	$(750 / (750 + 3900))$	16%

Post - Acquisition Gearing on Market Values if debt finance used		
Original Equity Value		3900
Synergies Acquired	Acquisition price was \$400 but worth \$430 so equity will increase by \$30	<u>30</u>
Total Equity Value		3930
Original Debt Value		750
New Debt Issued		<u>400</u>
Total Debt Value		1150
Gearing	$(1150 / (1150 + 3930))$	23%

Post - Acquisition Gearing on Market Values if equity finance used		
Original Equity Value		3930
Value of CD		<u>430</u>
Total Equity Value		4360
Original Debt Value		750
Gearing	$(750 / (750 + 4360))$	15%

Illustration 3

ABC is currently financed through share capital (\$1 shares) of \$200, retained earnings of \$50 and long term 10% debt of \$70m. They made profit before interest and tax of \$27m in the most recent financial statements. The current share price is \$1.20.

The current borrowing have a covenant in place not to increase gearing (measured as debt / debt + equity at market values) below 25% and to keep interest cover above 3 times.

The directors plan to raise an additional \$10m in borrowings through a 5% loan secured on a company building.

Profits are expected to remain constant but the increase in financial risk means the share price is likely to drop to \$1.10.

(i) Calculate the gearing and interest cover before the new finance is issued.

(ii) Will ABC still be able to meet the debt covenants if it raises the new finance?

Solution (i)

Current Gearing & Interest Cover on Market Values		
Equity Value	(200 x 1.20)	240
Debt Value		<u>70</u>
Gearing	(70 / (70 + 240))	23%
PBIT		27
Interest	(70 x 10%)	<u>7</u>
Interest Cover	(27 / 7)	4

Solution (ii)

Projected Gearing & Interest Cover on Market Values		
Equity Value	(200×1.10)	220
Debt Value	$(70 + 10)$	80
Gearing	$(80 / (80 + 220))$	27%
PBIT		27
Interest	$(70 \times 10\%) + (10 \times 5\%)$	7.5
Interest Cover	$(27 / 7)$	3.6
The interest cover covenant would not be breached, but gearing would be too high and would breach that covenant.		

Illustration 4

FRT Co. has a current share price of \$3.76 and is considering offering a script dividend of 1 share for every 10 currently held.

What is the expected share price if the script dividend goes ahead?

Solution

Number of Shares	Share Price	Total
10	\$3.76	\$37.60
<u>1</u>	\$0	<u>0</u>
11		37.6
We now have 11 shares in issue at total value of \$37.6 so the share price would be expected to fall to $(37.6 / 11) = \$3.42$		

Illustration 5

DFF Ltd. has 1m shares in issue and the current share price is \$4. The directors have proposed returning \$500,000 to shareholders either through a cash dividend or a share re-purchase.

If a shareholder currently owns 1000 shares what will their position be under each option?

Solution

Receive a cash dividend		
Dividend Per Share	$(\$500,000 / 1\text{m})$	50c
Ex-dividend Share Price	$(\$4 - \$0.50)$	\$3.50
Value of Shares	(1000×3.50)	3,500
Dividends Received	$(1000 \times 50\text{c})$	<u>500</u>
Total Shareholder Wealth		4,000

Share Re-Purchase		
Initial Number of Shares		1,000,000
No. Shares Re-purchased	$(\$500,000 / \$4)$	<u>125,000</u>
Remaining Shares		875,000
% of shares re-purchased		12.5%
Remaining Shares	$(1000 \times 87.5\%)$	875
Share Price		<u>4</u>
Shares Value	$(875 \times \$4)$	3,500
Cash For Re-Purchase	$(125 \times \$4)$	500
Total Shareholder Wealth		4,000

Objective Test Questions

1. Ando Co. has PBIT in the last financial year of \$120m and an interest charge of \$30m. It is funded by equity of \$500m and debt of \$300m. In the current year they have issued \$100m in new share capital and a \$50m 7% bond with PBIT remaining constant. Which of the following is correct for the current year?

- A. Gearing (Debt/Debt+Equity) is 39% and interest cover is 3.58 times.
- B. Gearing (Debt/Debt+Equity) is 37% and interest cover is 3.58 times.
- C. Gearing (Debt/Debt+Equity) is 58% and interest cover is 2.58 times.
- D. Gearing (Debt/Debt+Equity) is 50% and interest cover is 4.00 times.

Answer B

$$\text{Gearing} = ((300 + 50) / (350 + (500 + 100)) = 37\%$$

$$\text{Interest Cover} = (120 / (30 + (50 \times 7\%))) = 3.58$$

2. Nono Co. is acquiring a competitor and requires \$110m in finance to do so. They have valued the competitor at \$120m. They will raise \$50m through a 6% bond and the rest through a share issue (current share price \$2.10).

Nono is currently financed through share capital (\$1 shares) of \$900, retained earnings of \$500 and long term debt of \$200m. Which of the following is correct after the acquisition?

- A. Gearing (Debt / Debt + Equity) will be 13% on book value and 15% on market value.
- B. Gearing (Debt / Debt + Equity) will be 15% on book value and 18% on market value.
- C. Gearing (Debt / Debt + Equity) will be 18% on book value and 15% on market value.
- D. Gearing (Debt / Debt + Equity) will be 20% on book value and 18% on market value.

Answer B

Post - Acquisition Gearing on Book Values		
Original Equity Value	(900 + 500)	1400
Synergies Acquired	Acquisition price was \$110 but worth \$120 so equity will increase by \$10	10
Shares Issued	(110 - 50)	60
Total Equity Value		1470
Original Debt Value		200
New Debt Issued		50
Total Debt Value		250
Gearing	(250 / (250 + 1470))	15%

Post - Acquisition Gearing on Market Values		
Original Equity Value	(900 x \$1.20)	1,080
Synergies Acquired	Acquisition price was \$110 but worth \$120 so equity will increase by \$10	10
New Shares Issued	(110 - 50)	60
Total Equity Value		1150
Original Debt Value		200
New Debt Issued		<u>50</u>
Total Debt Value		250
Gearing	(250 / (250 + 1150))	18%

3. Salso Co. has PBIT of \$50m and a bank loan of \$200m at an interest rate of 4% with an interest cover covenant of 5 times. They now intend to raise an additional \$50m of finance at a rate of 5%. Which of the following will be correct if they go ahead?

- A. Interest cover will be 4.76 and the covenant will be breached.
- B. Interest cover will be 4.76 and the covenant will not be breached.
- C. Interest cover will be 6.25 and the covenant will be breached.
- D. Interest cover will be 6.25 and the covenant will not be breached.

Answer A

Interest (200 x 4% + 50 x 5%) = \$10.5m

Interest Cover (50 / 10.5) = 4.76

4. FRT Co. has a current share price of \$6.55 and is considering offering a script dividend of 1 share for every 30 currently held.

What is the expected share price if the script dividend goes ahead?

- A. \$5.95
- B. \$6.55
- C. \$6.43
- D. \$6.34

Answer D

Number of Shares	Share Price	Total
30	\$6.55	\$196.50
<u>1</u>	\$0	<u>0</u>
31		196.5
We now have 31 shares in issue at total value of \$196.5 so the share price would be expected to fall to $(196.5 / 31) = \$6.34$		

5. Which of these statements related to a share repurchase scheme is NOT correct?

- A. It will increase the wealth of some shareholders.
- B. It involves the purchase and canceling of some of the company's own shares.
- C. It is likely to increase the gearing of the company.
- D. It is likely to increase the EPS of the company.

Answer A (it has no effect on shareholder wealth)

Lecture 8 - Further Strategic Considerations

Illustration 1

US Interest rate = 10%

UK Interest rate = 8%

Exchange rate = £1: \$ 2

Predict the exchange rate in 1 year

Solution

Future exchange rate calculation

Exchange rate now x 1+ Int (counter) / 1 + int (base)

$$2 \quad \times \quad 1.10 \quad / \quad 1.08 = \mathbf{2.037}$$

Objective Test Questions

1. 'There is a risk that the value of our foreign currency-denominated assets and liabilities will change when we prepare our accounts.'

To which risk does the above statement refer?

- A Translation risk
- B Economic risk
- C Transaction risk
- D Interest rate risk

Answer A

2. The current interest rate in the UK is 4% whilst in the US it is 6%. The spot rate is £1:\$1.35. What is the expected exchange rate in six months time?

- A. £1: \$1.325
- B. £1: \$1.376
- C. £1: \$1.363
- D. £1: \$1.337

Answer C

3. Which of the following statements is NOT correct?

- A. Increased inflation may lead to an increase in finance costs for a business.
- B. Increased inflation will have a detrimental effect on those people on a fixed income such as pensioners.
- C. An increase in inflation is likely to lead to a drop in average wages.
- D. Inflation increases may lead consumers to bring forward purchases they are intending to make.

Answer C

4. Which of the following THREE statements are correct?

- A. Interest rates may be increased in response to falling inflation.
- B. Decreases in interest rates will increase the disposable income available to consumers.
- C. The exchange rate tends to rise in response to an increase in interest rates.
- D. Interest rate increases tend to happen during a recession.
- E. A decrease in the interest rate may signal the end of an upward trend in the business cycle.

Answer B, C & E

Kaplan Exam Kit Q41

Lecture 9 - Hedge Accounting

Illustration 1

In June 20X5 ABC Co. (a jewelry manufacturer) is worried about the price of gold increasing. ABC intends to buy 1,000 ounces of gold on 31st Dec 20X5 so enters into a futures contract to buy 1,000 ounces of gold at \$1,235 per ounce on 31 June 20X5.

The year end of ABC Co. is 31 October 20X5 and on that date the futures price for delivery on 31 Dec 20X5 is \$1,300 per ounce.

Show the accounting entries to record the futures contract in the financial statements at the year end 31 October 20X5.

Solution

The initial cost of the futures contract is zero (one of the characteristics of a derivative).

By the year end it has moved in value creating a gain as ABC has a contract to buy at \$1,235 whereas it would now have cost \$1,300 so they could sell it at that price if they wanted to.

so...

DR Financial Asset (1,000 x (1,300 - 1,235)) =	\$65,000
CR Gain in P/L	\$65,000

Illustration 2

A company purchases a \$2 million bond that has a fixed interest rate of 6% per year . The instrument is classed as a FVPL financial asset. The fair value is \$2 million.

The company enters into an interest rate swap (fair value zero) to offset the risk of a decline in fair value. If the derivative hedging instrument is effective, any decline in the fair value of the bond should be offset by opposite increases in the fair value of the derivative instrument. The swap is expected to be 100% effective.

The company designates and documents the swap as a hedging instrument.

Market interest rates increase to 7% and the fair value of the bond decreases to \$1,920,000.

Show the double entry to record the hedge in the financial statements

Solution

The instrument is a hedged item in a fair value hedge, this change in fair value of the instrument is recognised in profit or loss, as follows:

Dr Income statement 80,000

Cr Bond 80,000

The fair value of the swap has increased by \$80,000. Since the swap is a derivative, it is measured at fair value with changes in fair value recognised in profit or loss.

Dr Swap 80,000

Cr Income statement 80,000

The changes in fair value of the hedged item and the hedging instrument exactly offset, the hedge is 100% effective and, the net effect on profit or loss is zero.

Illustration 3

ABC intends to buy 1,000 ounces of gold on 31st Jan 20X6 at the prevailing market price on that date. The current price of gold is \$1,200.

ABC is concerned that the price of gold may rise, so enters into a futures contract to buy 1,000 ounces of gold at \$1,300 per ounce on 31 March 20X5.

The company designates and documents the futures contract as a hedging instrument.

The year end of ABC Co. is 31 October 20X5 and on that date the futures price for delivery on 31 March 20X6 is \$1,400 per ounce. The market price of gold on that date is \$1,325.

On 31 Jan 20X6 the futures contract is settled at \$1,450 and the contract for the gold purchase is completed at a price of \$1,350.

Show the impact of this cash flow hedge on the financial statements of ABC Co. at:

- (i) 31 Oct 20X5
- (ii) 31 Jan 20X6

Solution

31 Oct 20X5

The gain on the futures contract of $(1,000 \times (1,400 - 1,300))$ \$100,000 will initially be recognised in reserves:

DR Financial Asset	\$100,000
CR Reserves (OCI)	\$100,000

31 Jan 20X6

Now that the transaction has taken place both parts can be taken to Profit or Loss

DR Purchase of Gold (1,000 x 1,350)	\$1,350,000
CR Cash	\$1,350,000
CR Gain on futures contract (1,000 x (1,450 - 1,300))	\$150,000
DR Cash	\$150,000

The net effect is that the cost of the gold was $(1,350,000 - 150,000)$ \$1,200,000 - which was the prevailing price when the futures contract was entered into to hedge price fluctuations.

Objective Test Questions

1. NMN is a UK based company and is receiving \$400,000 from a US customer in 6 months. NMN takes out a forward contract at a rate of £1:\$1.40 and by it's year end in 3 months the spot rate is £1:\$1.45. At what value should the contract be included in the financial statements at the year end?

- A. £275,862
- B. £285,714
- C. £9,852
- D. Zero

Answer C

Forward contract amount expected $(400,000 / 1.4)$ £285,714

Spot rate value $(400,000 / 1.45)$ £275,862

Initial Valuation on inception = 0 (No Cost)

Increase in value of Forward $(285,714 - 275,862) = £9,852$

2. Which of the following statements regarding hedge accounting is NOT correct?

- A. A 'hedging instrument', usually a derivative, is used to offset losses in a 'hedged item'.
- B. The hedging relationship must be documented at inception of the hedge.
- C. The effectiveness of the hedge is assessed at the end of the hedging relationship.
- D. The forecast transaction must be highly probable.

Answer C

3. ABC Co. is a UK firm and has an investment of \$200m in a US company. They have hedged this investment through issuing a US bond worth \$180m at inception. The exchange rate was \$1 = £0.65 at inception and is now \$1 = 0.75. How effective is the hedge?

- A. 50%
- B. 120%
- C. 90%
- D. 100%

Answer C

	Investment	Bond
Value at inception	$(\$200\text{m} / 0.65) = \text{£}130\text{m}$	$(\$180 \times 0.65) = \text{£}117$
Value now	$(\$200\text{m} / 0.75) = \text{£}150\text{m}$	$(\$180 \times 0.75) = \text{£}135$
Difference	£20m Gain	£18m Loss
Effectiveness	$(18/20) = 90\%$	

4. P has inventory 1000 barrels of oil at cost of \$120,000. They hedge the risk of a fall in value by taking out a futures contract to sell at \$100 per barrel. By the year end the oil price is \$50 per barrel and the futures price is \$40. Which of the following is the correct treatment at the year end:

- A. Debit the P/L with \$70,000 for the inventory and credit the P/L with \$60,000 for the futures contract.
- B. Credit the P/L with \$70,000 for the inventory and debit the P/L with \$60,000 for the futures contract.
- C. No entries should be made as the hedge is not effective.
- D. Debit OCI with \$70,000 for the inventory and credit OCI with \$60,000 for the futures contract.

Answer A

Loss on inventory $(120,000 - (1000 \times 50)) = \$70,000$

Gain on future $(1000 \times 100) - (1000 \times 40) = \$60,000$

5. Which of the following statements regarding a cash flow hedge is NOT correct?

- A. The item being hedged is a future cash flow.
- B. Any changes in fair value of the hedging instrument are recorded immediately in the P/L account.
- C. The hedge must be highly effective.
- D. The risk being hedged must be documented by the entity

Answer B

Kaplan Exam Kit Q42 - 50

Lecture 10 - Financial Inst. Disclosures

No Illustrations, Just Objective Test Questions

1. IFRS 7 splits financial instrument disclosures into 2 categories. Which of the following is a category of disclosure under IFRS 7?

- A. Information about strategies.
- B. Information about significance.
- C. Information about hedging.
- D. Information about risks.
- E. Information about reclassification.

Answer B and D

2. Which of the following is not a required disclosure under the 'Information about risks' category of IFRS 7?

- A. Qualitative disclosures
- B. Quantitative disclosures
- C. Market Risk disclosures
- D. Cash flow disclosures

Answer D

Lecture 11 - Sources of Finance

No Illustrations, Just Objective Test Questions

1. Which of TWO the following is likely to encourage an entity to fund an investment through the use of equity finance?

- A. They feel that their current Weighted Average Cost of Capital is too high and wish to lower it.
- B. It is a long term investment.
- C. They want to reduce their tax bill.
- D. They would like to hedge the currency risk on the investment.
- E. There is a covenant on some of their debt to keep gearing below a certain level.

Answer B & E

2. Which of the following statements is NOT correct?

- A. Ordinary shares carry the right to vote at the AGM.
- B. Preference shares pay a fixed dividend from post tax earnings.
- C. Dividends on ordinary shares and preference shares are discretionary.
- D. A skipped dividend on a cumulative preference share is payable in future years.

Answer C (only on ordinary)

3. Which of the following statements is NOT true of the stock market?

- A. Investors can use the information on the stock market to assess historic performance.
- B. To become listed on the stock market is time consuming and expensive.
- C. Listed companies will find it more difficult to raise finance than unlisted companies.
- D. Company founders can use the stock market to realise the value in their company.

Answer C

Lecture 12 - Issuing Shares

Illustration 1

Jumbo Co. currently has 5m ordinary shares with a market value of \$4.21. They plan to issue new shares at a 5% discount to current value in order to fund a \$4m investment in a project expected to give a positive NPV of \$1m.

What will be the gain per share if Jumbo go ahead with this plan?

Current Market Value	(5m x \$4.21)	21,050
New Equity Raised		4,000
NPV of project		<u>1,000</u>
Total New Value		26,050
Original Number of Shares		5,000
New Shares Issued	(4m / (\$4.21 x 95%))	<u>1,000</u>
Total Shares Now		6,000
New Share Price	(26,050 / 6,000)	4.34
Increase Per share	(4.34 - 4.21)	0.13

Illustration 2

Inchie Co. is seeking to raise \$10m to invest in a new project. They have asked for investors to tender offers and have received the following:

Max. Share Price (\$ Per Share)	No. Shares Requested (Million)
5.75	0.387
5.50	0.669
5.25	0.885
5.00	0.901

What strike price should be set by Inchie Co.?

Solution

Max. Share Price (\$ Per Share)	No. Shares Requested (Million)	Cumulative Shares	Capital Raised (Million)
5.75	0.387	0.387	2.225
5.50	0.669	1.056	5.808
5.25	0.885	1.941	10.190
5.00	0.901	2.842	14.210

The strike price will be set at \$5.25 and at that price 1.941m shares will be taken up by investors giving a total amount of capital raised of \$10.190m

Objective Test Questions

1. Which of the following statements is NOT correct?

- A. Listing a company on the stock exchange is likely to increase its value.
- B. The weighted average cost of capital is likely to rise once a company becomes listed.
- C. Stakeholders may perceive the company as of higher standing after a stock market listing.
- D. A listed company will find it easier to raise further finance in the future.

Answer B

2. Which TWO of the following statements are correct.

- A. There is the potential that an IPO at a fixed price will raise more capital than is required by the company.
- B. An IPO at a tender price may fail if the price offered by investors is insufficient to raise the capital required.
- C. In an IPO an issuing house decides the price at which to offer the shares.
- D. Staggering involves buying a small number of shares in an IPO and hoping to make a long term return.
- E. Investors who own shares before the IPO may be prevented from selling their shares for a time after.

Answer B, E

3. Archie Co. is seeking to raise \$20m to invest in a new project. They have asked for investors to tender offers and have received the following:

Max. Share Price (\$ Per Share)	No. Shares Requested (Million)
10.50	0.487
9.75	0.769
9.00	0.985
8.25	0.901

Exactly how much capital will be raised at the strike price likely to be chosen by Archie?

- A. \$20.00m
- B. \$25.92m
- C. \$20.17m
- D. \$5.11m

Answer C

Max. Share Price (\$ Per Share)	No. Shares Requested (Million)	Cumulative Shares	Capital Raised (Million)
10.500	0.487	0.487	5.114
9.750	0.769	1.256	12.246
9.000	0.985	2.241	20.169
8.250	0.901	3.142	25.922

4. Which of the following would NOT be true of private placing of shares.

- A. It will lead to an active market in the shares as there are more shares available.
- B. It is cheaper to arrange than an IPO.
- C. It can be done quite quickly and often does not need the detailed disclosures of an IPO.
- D. The placing does not need to be publicly announced.

Answer A

5. Which of the following TWO statements is true of a private equity buy out of a listed company.

- A. Often the debt to equity ratio of the funds used to undertake the buy out is above 80/20.
- B. Companies with falling cash flows and share price along with a high asset value is susceptible to a private buy-out.
- C. The prime reason for a private equity buy out is to make profit from the company cash flows generated.
- D. The exit-strategy refers to how the private equity firm raise the funds to purchase the company.
- E. Once a firm is de-listed from the stock exchange it cannot return in the future.

Answer A, B

Lecture 13

Rights Issue

Illustration 1

XYZ Ltd. intends to raise capital via a rights issue.

The current share price is \$8.

They are offering a 1 for 4 issue at a price of \$6.

Calculate the Theoretical Ex-rights Price.

Solution

Number of Shares	Share Price	Total
4	\$8	$(4 \times \$8) = 32$
1	\$6	$(1 \times \$6) = 6$
5		38
We now have 5 shares in issue at total value of \$38 so the THERP is $(38 / 5) = \$7.60$		

Illustration 2

ABC Ltd. has decided to raise capital via a rights issue.

The share price is currently \$5.50 and ABC intends to raise \$5m.

There are currently 6.25m shares in issue and ABC is offering a 1 for 5 rights issue.

Calculate the Theoretical Ex-Rights Price.

Solution

Amount of Capital to raise		\$5m
No. of shares issued (6.25m / 5)		1.25m
Share issue price (\$5m / 1.25m)		\$4
Number of Shares	Share Price	Total
5	\$5.50	$(5 \times 5.50) = 27.5$
1	\$4	$(1 \times 4) = 4$
6		31.5
We now have 6 shares in issue at total value of \$31.5 so the THERP is $(31.5 / 6) = \$5.25$		

Illustration 3

XYZ Ltd. intends to raise capital via a rights issue.

The current share price is \$18.

They are offering a 1 for 3 issue at a price of \$15.

The rate of return on the new shares is expected to be 13%.

The rate of return on existing capital is 10%.

Calculate the Yield Adjusted Theoretical Ex-rights Price.

Solution

Number of Shares	Share Price	Yield Adjustment	Total
3	\$18		\$54
1	\$15	13/10	<u>\$19.50</u>
4	\$18.38		\$73.50
We now have 4 shares in issue at total value of \$31.80 so the Yield Adjusted THERP is (73.50 / 4) = \$18.38			

Illustration 4

ABC Ltd. has decided to raise capital via a rights issue.

The share price is currently \$8 and ABC intends to raise \$15m.

There are currently 10m shares in issue and ABC is offering a 1 for 4 rights issue.

The rate of return on the new shares is expected to be 14%.

The rate of return on existing capital is 12%.

Calculate the Yield Adjusted Theoretical Ex-rights Price.

Solution

Amount of Capital to raise			15m
No. of shares issued		(10m / 4)	2.5m
Share issue price		(15m / 2.5m)	\$6
Number of Shares	Share Price	Yield Adjustment	Total
4	\$8		\$32
<u>1</u>	\$6	14/12	<u>\$7</u>
5			\$39
We now have 5 shares in issue at total value of \$39 so the Yield Adjusted THERP is (39 / 5) = \$7.80			

Objective Test Questions

1. Losto Co. has 30m \$1 shares in issue which have a current market value of \$6. They undertake a rights issue of 1 share for every 5 currently in issue and the theoretical ex rights price turns out to be \$5.40. How much finance did they raise?

- A. \$12.6m
- B. \$14.4m
- C. \$32.4m
- D. \$22.0m

Answer B

Total Value of Company before Rights issue (30m x \$6) = \$180m

Value after (36m x \$5.40) = \$194.4

Must have raised the difference = \$14.4m

2. If the discount on a rights issue is too little which of the following could be a consequence?

- A. The shareholders may not take up the right to buy the share.
- B. The share price could fall leading to a lack of demand for the issued shares.
- C. The company may not raise the capital they require.
- D. All of the above.

Answer D

3. ABC Ltd. has decided to raise capital via a rights issue.

The share price is currently \$15 and ABC intends to raise \$20m.

There are currently 8m shares in issue and ABC is offering a 1 for 5 rights issue.

The rate of return on the new shares is expected to be 10%.

The rate of return on existing capital is 7%.

What is the Yield Adjusted Theoretical Ex-rights Price.

- A. \$14.58
- B. \$15.48
- C. \$12.50
- D. \$13.34

Answer B

Amount of Capital to raise			20m
No. of shares issued		(8m / 5)	1.6m
Share issue price		(20m / 1.6m)	12.5
Number of Shares	Share Price	Yield Adjustment	Total
5	\$15		\$75
<u>1</u>	\$12.5	10/7	<u>\$17.86</u>
6		\$15.48	\$92.86
We now have 6 shares in issue at total value of \$92.86 so the Yield Adjusted THERP is (92.86 / 6) = \$15.48			

4. Which of the following statements is NOT correct?

- A. The rights attached to a share can be sold separately through the stock market.
- B. A rights issue is less expensive and quicker than an IPO.
- C. An underwriter is required for a rights issue.
- D. If a shareholder does not take up or sell the rights they will experience a decrease in shareholder wealth.

Answer D

Kaplan Exam Kit Q94 - 99

Lecture 14 - Debt Finance

No Illustrations, Just Objective Test Questions

1. Which of the following statements is NOT correct?

- A. A company that issues an unsecured bond will often pay a higher rate of interest on it than a secured bond.
- B. The interest paid on debt is tax deductible and therefore debt is a relatively cheap source of finance.
- C. Floating security over general business assets guarantees creditors all of their capital back.
- D. Debt covenants such as dividend restrictions preserve liquidity to ensure interest is paid.

Answer C (Not a guarantee)

2. Which THREE of the following statements are correct?

- A. Revolving Credit Facilities (RCFs) involve a fixed amount of credit with ongoing interest due on the total.
- B. There is a secondary market for corporate bonds where investors can sell before the bond matures.
- C. Commercial paper is long term company debt.
- D. Bond Underwriters advertise and place the bond issue.
- E. Bonds may be purchased by individuals, companies or the government.

Answer B, D, E.

3. Which of the following statements is correct relating to the issue of bonds on the London Stock Exchange?

- A. Any company with a value of £1bn or more can issue bonds on the London Stock Exchange.
- B. The underwriters will decide the interest rate and redemption date of the bond.
- C. A market maker is required to buy and sell the bonds or the issue will fail.
- D. A bond issue does not require a prospectus or advertising like a share issue.

Answer C

4. Put the following in order as to the interest rate likely to be paid with the one with the highest rate first:

1. Commercial Paper
2. Convertible Debt
3. Corporate Bond
4. Long term Secured Bank Loan

- A. 1, 3, 4, 2
- B. 3, 2, 4, 1
- C. 1, 4, 2, 3
- D. 2, 3, 4, 1

Answer B

Kaplan Exam Kit Q79 to 84

Lecture 15

Lease v Buy

Illustration 1

Machine cost \$10,000

The Machine has a useful economic life of 5 years with no scrap value

Capital allowances available at 25% reducing balance

Finance choices

- 1) 5 year loan 14.28% pre tax cost
- 2) 5 year Finance Lease @ \$2,200 pa in advance

If the machine is purchased then maintenance costs of \$100 per year will be incurred.

The tax rate is 30%.

The leasing company will maintain the machine if it is leased.

Should the company lease or buy the machine.

Solution

Buy

Working 1 - Capital Allowances

Period	Balance	25% WDA	30% Tax Saving	Period
1	10000.00	2500.00	750.00	2
2	7500.00	1875.00	562.50	3
3	5625.00	1406.25	421.88	4
4	4218.75	1054.69	316.41	5
5	3164.06	3,164.06	949.22	6

Working 2 - Maintenance

Amount	Tax Saving
\$100 per Year	$(100 \times 30\%) = \$30$

Working 3 - Discount Rate

Pre-tax Borrowing Rate	14.28%
Tax Rate	30%
Post Tax Borrowing Rate	$14.28 \times (1 - 0.3) = 10\%$

Working 4 - NPV

Period	0	1	2	3	4	5	6
Capital	-10,000						
WDA Tax Saving (W1)			750	562	422	316	949
Maintenance		-100	-100	-100	-100	-100	
Maintenance Tax Saving (W2)			30	30	30	30	30
Total Cash Flows	-10,000	-100	680	492	352	246	979
Discount Rate 10% (W3)	1	0.909	0.826	0.751	0.683	0.621	0.564
PV Cash Flows	-10,000	-91	562	369	240	153	552
NPV	-8,214						

Lease

Period	0	1	2	3	4	5	6
Capital	-2200	-2200	-2200	-2200	-2200		
Tax Saving on Lease Payment			660	660	660	660	660
Total Cash Flows	-2200	-2200	-1540	-1540	-1540	660	660
Discount Rate 10% (W3)	1	0.909	0.826	0.751	0.683	0.621	0.564
PV Cash Flows	-2,200	-2000	-1272	-1157	-1052	410	372
NPV	-6,898						

Based on the above, the company should lease the machine.

Illustration 2

Endavour Co. is considering purchasing an asset worth \$250,000 on a 4 year finance lease with annual payments of \$70,500 payable in arrears.

Calculate the interest to be paid in each of the 4 years of the lease using the actuarial method.

Solution

1. Calculate annuity factor $(250,000 / 70,500) = 3.546$
2. Find the annuity factor closest to this on the cumulative discount rate tables for year 4, the closest to this being 5% (3.546).
3. Allocate interest

	Year 1	Year 2	Year 3	Year 4
Opening Balance	250,000	192,000	131,100	67,155
Interest at 5%	12,500	9,600	6,555	3,358
Lease Payment	-70,500	-70,500	-70,500	-70,500
Closing Balance	192,000	131,100	67,155	13

Illustration 3

Endavour Co. is considering purchasing an asset worth \$250,000 on a 4 year finance lease with annual payments of \$70,500 payable in arrears.

Calculate the interest to be paid in each of the 4 years of the lease using the sum of digits method.

Solution

Total Interest = Amount Payable - Asset Value

Total Interest = $(70,500 \times 4) - 250,000 = \$32,000$

Sum of Digits = $4 \times (4 + 1) / 2 = 10$

Year	Remaining / SOD	Total Interest	Annual Interest
1	4/10	32,000	12800
2	3/10	32,000	9600
3	2/10	32,000	6400
4	1/10	32,000	3200

Objective Test Questions

1. Which of the following statements best describes a finance lease?

- A. A contract that allows the use of an asset but does not convey rights of ownership.
- B. A method of raising capital which may or may not be used for purchase of an asset.
- C. A contract that transfers substantially all of the risk and rewards of ownership to the lessee.
- D. A contract where the lessor retains beneficial ownership of the asset.

Answer C

2. Davos Co. intends to lease a machine on a 5 year operating lease for a payment of \$3,500 payable in advance. The tax rate is 30%. The pre-tax cost of borrowing is 15.71%. What is the present value cost to the business of leasing the machine?

- A. \$9,440
- B. \$10,480
- C. \$10,864
- D. \$10,974

Answer C

Period	0	1	2	3	4	5	6
Capital	-3,500	-3,500	-3,500	-3,500	-3,500		
Tax Saving on Lease Payment			1,050	1,050	1,050	1,050	1,050
Total Cash Flows	-3,500	-3,500	-2,450	-2,450	-2,450	1,050	1,050
Discount Rate 11% 15.71 x (1 - 0.3)	1	0.901	0.812	0.731	0.659	0.593	0.535
PV Cash Flows	-3,500	-3154	-1989	-1791	-1615	623	562
NPV	-10,864		4.231		3.103		

3. Enterprise Co. is considering purchasing an asset worth \$500,000 on a 4 year finance lease with annual payments of \$151,000 payable in arrears.

What is the interest to be paid in year 3 of the lease if calculated using the annuity method?

- A. \$31,120
- B. \$26,740
- C. \$21,530
- D. \$11,172

Answer C

Solution

1. Calculate annuity factor $(500,000 / 151,000) = 3.311$
2. Find the annuity factor closest to this on the cumulative discount rate tables for year 4, the closest to this being 8% (3.312).
3. Allocate interest

	Year 1	Year 2	Year 3	Year 4
Opening Balance	500,000	389,000	269,120	139,650
Interest at 8%	40,000	31,120	21,530	11,172
Lease Payment	-151,000	-151,000	-151,000	-151,000
Closing Balance	389,000	269,120	139,650	-178

4. Enterprise Co. is considering purchasing an asset worth \$500,000 on a 4 year finance lease with annual payments of \$151,000 payable in arrears.

What is the interest to be paid in year 4 of the lease if calculated using the sum of digits method?

- A. \$10,400
- B. \$20,800
- C. \$21,530
- D. \$41,600

Answer A

Solution

Total Interest = Amount Payable - Asset Value

Total Interest = (151,000 x 4) - 500,000 = \$104,000

Sum of Digits = $4 \times (4 + 1) / 2 = 10$

Year	Remaining / SOD	Total Interest	Annual Interest
1	4/10	104,000	41600
2	3/10	104,000	31200
3	2/10	104,000	20800
4	1/10	104,000	10400

Lecture 16

Capital Structure

Capital Structure - Illustration 1

A company has total capital of \$1,000 with debt making up \$300 and equity making up \$700 of the total. The company's cost of debt is 5% and cost of equity is 14%.

- I. Calculate the company's current WACC.
- II. Calculate the WACC if the company substitutes \$200 of equity for \$200 of debt causing their cost of equity to rise to 16%.
- III. Calculate the WACC if the company substitutes \$300 of equity for \$300 of debt causing their cost of equity to rise to 25%.

Solution

I.

Item	Market Value	Weighting	Cost	WACC
Debt	300	300 / 1000	5%	1.5
Equity	<u>700</u>	700 / 1000	14%	<u>9.8</u>
	<u>1000</u>			<u>11.3</u>

II.

Item	Market Value	Weighting	Cost	WACC
Debt	500	500 / 1000	5%	2.5
Equity	<u>500</u>	500 / 1000	16%	<u>8</u>
	<u>1000</u>			<u>10.5</u>

III.

Item	Market Value	Weighting	Cost	WACC
Debt	600	600 / 1000	5%	3
Equity	<u>400</u>	400 / 1000	25%	<u>10</u>
	<u>1000</u>			<u>13</u>

Objective Test Questions

1. If two companies have the 1..... **(same/different)** annual cash flows and operate in the same industry then the company with the 2..... **(lower/higher)** weighted average cost of capital will have a higher value. The missing words are:

- A. 1. same 2. higher
- B. 1. same 2. lower
- C. 1. different 2. lower
- D. 1. different 2. higher

Answer A

2. Which TWO of the following statements regarding the traditional view of capital structure are correct?

- A. There is a linear relationship between the cost of equity and financial risk.
- B. There is a level of gearing at which the WACC can be minimised.
- C. No matter what the gearing level the cost of debt remains constant.
- D. If the company takes on more debt the value of the firm always decreases.
- E. At high levels of gearing the shareholders require a greater return.

Answer B, E

3. Which of the following statements concerning capital structure theory is correct?

- A. The traditional view of capital structure suggests that the company can maximise their weighted average cost of capital
- B. Modigliani and Miller said that, incorporating tax, the weighted average cost of capital would remain constant
- C. Modigliani and Miller said, ignoring tax, the value of the firm will remain constant at all gearing levels.
- D. Modigliani and Miller said, incorporating tax, the value of the firm will remain constant at all gearing levels.

Answer C

4. What does the M&M model with tax suggest a company should do with their capital structure?

- A. As there is greater financial risk at high levels of gearing the company should have as little debt as possible.
- B. As the transaction costs will be high the company should retain their current capital structure for as long as possible.
- C. As taking on more debt reduces the weighted average cost of capital the company should increase their gearing levels.
- D. The company should find the optimum capital structure at which it can minimise its weighted average cost of capital.

Answer C

Kaplan Exam Kit Q51 - 58

Lecture 17

M & M Formulae

Illustration 1

ABC Ltd has a share price of 350c and 1m shares in issue. It currently has no debt. Current cost of capital is 13%.

The directors have decided to replace \$2m of equity with 10% debt. The tax rate is 30%.

Required

(i) Calculate the new total value (Debt + Equity) of the geared firm.

(ii) Calculate the value of the shareholder's equity in the geared firm (Total Value - Debt).

		\$'000
Value of Ungeared Firm	(1m x 350c)	3,500
Market Value of Debt		2,000
Tax Rate		30%
Fill into Formula ($V_g = V_u + TB$)	$V_g = (3500 \times (30\% \times 2000))$	4,100
Value of Debt	(In Question)	2,000
Value of Equity	(4,100 - 2,000)	2,100

Illustration 2

DFR Co. currently has \$1000m of equity and no debt with a cost of equity of 12%. It is considering issuing a \$300m 7% bond to fund a new project. If the tax rate is 30% what will DFR's cost of equity move to according to M&M?

Solution

$K_{eg} = K_{eu} + (K_{eu} - K_d) V_d(1-t)/V_e$
$K_{eg} = 12 + (12 - 7) 300(1-0.30) / 1000$
$K_{eg} = 13.05\%$

Illustration 3

ABC Co. and CD Co. operate in the same industry and are identical in their ability to generate cash flows.

ABC Co. is financed by Equity only of 3000m shares with current value of \$1 and has a cost of equity calculated at 15%.

CD Co. has irredeemable debt with a market value of \$900m and cost of debt of 8%. The value of CD's equity is \$2,397m.

The tax rate is 33%.

Required

(i) Calculate the Cost of Equity for CD Co.

Solution

$K_{eg} = K_{eu} + (K_{eu} - K_d) V_d(1-t)/V_e$
$K_{eg} = 15 + (15 - 8) 900(1-0.33) / 2,397$
$K_{eg} = 16.76\%$

Illustration 4

ABC Co. and CD Co. operate in the same industry and are identical in their ability to generate cash flows.

ABC Co. is financed by Equity only of 3000m shares with current value of \$1 and has a cost of equity calculated at 15%.

CD Co. has the same total capital but within it has irredeemable debt with a market value of \$900m and cost of debt of 8%. The value of equity (Ve) is \$2,397m

The tax rate is 33%.

Required

(i) Calculate the WACC for CD Co.

Solution

$WACC = K_{eu} [1 - (V_{dt}/V_e + V_d)]$
$K_{adj} = 15 [1 - (0.33 \times 900 / (900 + 2,397))]$
$K_{adj} = 13.65$

Objective Test Questions

1. ABC Co. and CD Co. operate in the same industry and are identical in their ability to generate cash flows.

ABC Co. is financed by Equity only of 3m shares with current value of \$1 and has a cost of equity calculated at 15%.

CD Co. has the same total capital but within it has irredeemable debt with a market value of \$0.9m.

The tax rate is 33%.

What is the value of the shareholder's equity only in CD Co.

- A. \$3,297m
- B. \$3,000m
- C. \$2,397m
- D. \$3,900m

Answer C

Solution

Value of Ung geared Firm	(3m x 100c)	3,000
Market Value of Debt		900
Tax Rate		33%
Fill into Formula ($V_g = V_u + TB$)	$V_g = (3,000 \times (33\% \times 900))$	3,297
Value of Debt	(In Question)	900
Value of Equity	(3,297 - 900)	2,397

2. DEF Co. and GR Co. operate in the same industry and are identical in their ability to generate cash flows.

DEF Co. is financed by Equity only of 5000m shares with current value of \$2.33 and has a cost of equity calculated at 14%.

CD Co. has irredeemable debt with a market value of \$2000m and cost of debt of 6%. The value of CD's equity is \$8000m.

The tax rate is 25%.

(i) What is the Cost of Equity for CD Co.

- A. 14%
- B. 16%
- C. 15.5%
- D. 13.5%

Answer C

$K_{eg} = K_{eu} + (K_{eu} - K_d) V_d(1-t)/V_e$
$K_{eg} = 14 + (14 - 6) 2000(1-0.25) / 8000$
$K_{eg} = 15.5\%$

3. DEF Co. and GR Co. operate in the same industry and are identical in their ability to generate cash flows.

DEF Co. is financed by Equity only of 5000m shares with current value of \$2.33 and has a cost of equity calculated at 14%.

CD Co. has irredeemable debt with a market value of \$2000m and cost of debt of 6%. The value of CD's equity is \$8000m.

The tax rate is 25%.

Required

(i) Calculate the WACC for CD Co.

- A. 13.3%
- B. 14%
- C. 11.2%
- D. 10.7%

Answer A

$WACC = K_{eu} [1 - (V_{dt}/V_e + V_d)]$
$K_{adj} = 14 [1 - (0.25 \times 2000 / (2000 + 8000))]$
$K_{adj} = 11.5\%$

Lecture 18 - Gearing in the real world

No Illustrations, Just Objective Test Questions

1. According to pecking order theory, in which order would a firm access the following sources of finance?

- i. Preference Shares
- ii. Retained earnings
- iii. Ordinary Shares
- iv. Debentures

- A. ii, iii, i, iv
- B. iii, i, iv, ii
- C. ii, i, iv, iii
- D. ii, iv, i, iv

Answer D

2. Which of the following statements is NOT correct?

- A. Static trade off theory suggests the WACC can be minimised through a balance of debt and equity.
- B. The benefits of increased debt finance in lowering the WACC may be wiped out through 'tax exhaustion'.
- C. Gearing drift suggests that over time the gearing levels in a company tend to drift upwards.
- D. A company's debt capacity may be increased by successful projects with a positive NPV.

Answer C (It tends to drift down)

3. Which of the following statements related to transfer pricing is NOT correct?

- A. Transfer pricing is often used by companies to reduce their tax liability.
- B. Countries often have rules that mean that transfer pricing must reflect market prices for such transactions.
- C. Transfer pricing is illegal in many developed nations.
- D. Setting transfer pricing levels carries significant reputation risk for the company.

Answer C

4. Which TWO of the following statements are correct?

- A. Thin capitalisation is of interest to revenue authorities concerned about abuse by excessive interest deductions.
- B. Thin capitalisation rules determine how much interest paid on corporate debt is deductible for tax.
- C. Often an interest cover of greater than 3 will indicate thin capitalisation.
- D. Creditors will be unconcerned by thin capitalisation as the risk is borne by debt holders.

Answer A, B

Lecture 19 - Swaps

Illustration 1

Company A is considering an interest rate swap with Company B. They can borrow at the following rates:

	Fixed	Floating
A	10%	LIBOR +1%
B	12%	LIBOR +1.5%

Show the effect of using an interest rate swap.

Solution

Working 1

	Fixed	Floating
Company A	10	L + 1
Company B	<u>12</u>	<u>L + 1.5</u>
Difference	2	0.5
The largest difference is on Fixed with a total of 2%		
Total Saving	(2 - 0.5)	1.5%
	A	B
Split Saving	0.75%	0.75%

Working 2

	Co. A	Co. B
Borrow	-10	(L + 1.5)
Swap	10	-10
Swap	(L + 0.25)	L + 0.25
Total	(L + 0.25)	-11.25
Could have borrowed	(L + 1)	-12
Saving	0.75%	0.75%

Illustration 2

Evans Co. is an Australian firm looking to expand in France and is thus looking to raise €24m it can borrow at the following fixed rates:

A\$ 7.0%
 €5.6%

Portmoth is a Spanish Co. looking to acquire an Australian firm and wants to borrow A \$40m. It can borrow at the following rates:

A\$7.2%
 €5.5%

The current spot rate is A\$1 = €0.60

Show how a currency swap for 1 yr with interest paid at the end of the year would work.

Solution

	Evans Co	Portmoth
Borrow from bank now	A\$40m at 7.0%	€24m at 5.5%
Exchange principles	A\$40m to Portmoth	€24m to Evans Co.
Pay interest to Bank	A\$2.8m	€1.32m
Exchange Interest	€1.32 to Portmoth	A\$2.8m to Evans Co.
Swap back principle	€24m to Portmoth	A\$40m to Evans Co

Objective Test Questions

1. Company A is considering an interest rate swap with Company B. They can borrow at the following rates:

	Fixed	Floating
A	7%	LIBOR +1.25%
B	9.5%	LIBOR +1.75%

What rate of interest will Company B pay after the swap?

- A. LIBOR + 1.75%
- B. 8.5%
- C. LIBOR + 1.25%
- D. 9%

Answer B

Working 1

	Fixed	Floating
Company A	7	L + 1.25
Company B	9.5	L + 1.75
Difference	2.5	0.5
The largest difference is on Fixed with a total of 2.5%		
Total Saving	(2.5 - 0.5)	2%
	A	B
Split Saving	1%	1%

Working 2

	Co. A	Co. B
Borrow	-7	(L + 1.75)
Swap	7	-7
Swap	(L + 0.25)	L + 0.25
Total	(L + 0.25)	8.5
Could have borrowed	(L + 1.25)	-9.5
Saving	1%	1%

2. Which of the following statements is TRUE?

- A. A currency swap usually involves the swap of interest payments but not the capital amount.
- B. A currency swap involves the swap of capital amounts but not the periodic interest payments.
- C. A currency swap can be used to reduce borrowing costs and hedge currency risk.

Answer C

3. Company C can borrow \$100m at a variable rate of LIBOR + 2%. Company D can borrow \$100m at a variable rate of LIBOR + 2.75%. Company C can borrow this amount at a fixed rate of 6%.

Which of the following statements is true?

- A. If Company D is able to borrow at a fixed rate of 5.25% an interest rate swap will be beneficial to both.
- B. If Company D is able to borrow at a fixed rate of 7.5% an interest rate swap will be beneficial to both.
- C. The swap will be beneficial no matter what rate Company D can borrow fixed at.
- D. The swap will be not be beneficial no matter what rate Company D can borrow fixed at.

Answer B

	Fixed	Floating
Company C	6	L + 2
Company D	<u>7.5</u>	<u>L + 2.75</u>
Difference	1.5	0.75
The largest difference is on Fixed with a total of 1.5%		
Total Saving	(1.5 - 0.75)	0.75%

Lecture 19

Business Valuations

I

Illustration 1

Non Current Assets	550,000
Current Assets	170,000
Current Liabilities	-80,000
Share Capital	300,000
Reserves	200,000
10% Loan Notes	150,000
The Market Value of property in the Non Current Assets is \$50,000 more than the book value.	
The Loan Notes are redeemable at a 5% premium.	

What is the value of a 70% holding using the net assets valuation basis?

Solution

	Working	\$
Non Current Assets	550,000 + 50,000 (Property value)	600,000
Current Assets		170,000
Current Liabilities		-80,000
10% Loan Notes	150,000 x 105%	<u>-157,500</u>
		532,500
Value of 70%	532,500 x 70%	<u>372,750</u>

Illustration 2

ABC Co. wants to value their company in order to raise more capital. They have a lot of intangible assets so wish to use the CIV method to put a value to these.

ABC has operating profit of \$250m and has a WACC of 9% and an asset base of \$700m.

CD Co. is a larger but similar firm which made an operating profit of \$1,000m on an asset base of \$5,500m.

Calculate the value of ABC Co. incorporating the CIV.

Solution

Proxy Firm ROA

$$1,000 / 5,500 = 18\%$$

Value Spread

		\$m
Operating Profit		250
Less		
Proxy POA x Asset Base	18% x 700	<u>126</u>
Value Spread		124

Calculate CIV

$$\text{Discount Value Spread at Cost of Capital} = 124 / 0.09 = \$1,377\text{m}$$

Value Firm

Assets (Capital Employed) + CIV

$$700 + 1,377 = \$2,077\text{m}$$

Illustration 3

	X1	X2	X3
	\$'000	\$'000	\$'000
Revenue	3000	3500	4200
COS	2000	2400	3200
Gross Profit	<u>1000</u>	<u>1100</u>	<u>1000</u>
Admin Costs	300	350	400
Distribution Costs	200	250	300
PBIT	<u>500</u>	<u>500</u>	<u>300</u>
Interest	100	150	220
Tax	120	90	50
Profit After Tax	<u>280</u>	<u>260</u>	<u>30</u>
Dividends	100	110	30
Retained Earnings	<u>180</u>	<u>150</u>	<u>0</u>
Industry P/E Average	<u>13</u>	<u>12</u>	<u>14</u>

Calculate the Value of the Company for each of the 3 years using the P/E Ratio method.

Solution

Year	Industry P/E Ratio	Total Earnings	Value of Company
1	13	280,000	(13 x 280,000) = \$3.64m
2	12	260,000	(12 x 260,000) = \$3.12m
3	14	30,000	(14 x 30,000) = \$420,000

Illustration 4

	X1	X2	X3
	\$'000	\$'000	\$'000
Revenue	3200	3800	4800
COS	2000	2400	3200
Gross Profit	<u>1200</u>	<u>1400</u>	<u>1600</u>
Admin Costs	300	350	400
Distribution Costs	200	250	300
PBIT	<u>700</u>	<u>800</u>	<u>900</u>
Interest	100	150	220
Tax	120	90	50
Profit After Tax	<u>480</u>	<u>560</u>	<u>630</u>
Dividends	100	110	150
Retained Earnings	<u>380</u>	<u>450</u>	<u>480</u>
Industry P/E Average	<u>17</u>	<u>15</u>	<u>18</u>
Number of Shares	3m	3m	3m

Calculate the Earnings Per Share for each of the 3 years

Calculate the Value of the Company for each of the 3 years using the EPS you calculate.

Solution

Year	Earnings	No. Shares	EPS (Earnings / No. Ordinary Shares)
1	480,000	3m	16c
2	560,000	3m	18.66c
3	630,000	3m	21c

Year	Industry P/E Ratio	EPS	Share Price (EPS x P/E Ratio)	Value of Company
1	17	16c	\$2.72	$(2.72 \times 3m) = \$8.16m$
2	15	18.66c	\$2.80	$(2.80 \times 3m) = \$8.4m$
3	18	21c	\$3.78	$(3.78 \times 3m) = \$11.34m$

Illustration 5

	X1	X2	X3
	\$'000	\$'000	\$'000
Revenue	3100	3700	4600
COS	2000	2400	3200
Gross Profit	<u>1100</u>	<u>1300</u>	<u>1400</u>
Admin Costs	300	350	400
Distribution Costs	200	250	300
PBIT	<u>600</u>	<u>700</u>	<u>700</u>
Interest	100	150	220
Tax	120	90	50
Profit After Tax	<u>380</u>	<u>460</u>	<u>430</u>
Dividends	100	110	150
Retained Earnings	<u>280</u>	<u>350</u>	<u>280</u>
Earnings Yield	<u>0.15</u>	<u>0.18</u>	<u>0.17</u>
Number of Shares	4m	4m	4m

Calculate the Earnings Per Share for each of the 3 years and the share price using the earnings yield.

Solution

Year	Earnings	No. Shares	EPS (Earnings / No. Ordinary Shares)	Earnings Yield	Share Price (EPS / Earnings Yield)
1	380,000	4m	9.5c	0.15	63.33c
2	460,000	4m	11.5	0.18	63.88c
3	430,000	4m	10.75	0.17	63.23c

Objective Test Questions

1.

Non Current Assets	550,000
Receivables	170,000
Inventory	130,000
Overdraft	-180,000
Payables	-120,000
Share Capital	300,000
Reserves	200,000
10% Loan Notes	-150,000
The Market Value of property in the Non Current Assets is \$100,000 less than the book value.	
If realised now the receivables would be worth 64% of their current book value.	
If sold all at once the inventory would achieve 52% of it's current book value.	
The Loan Notes are redeemable at a 15% premium.	

What is the net assets value of the company if it did not continue as a going concern and was wound up to return funds to shareholders.

- A. \$176,400
- B. \$333,900
- C. \$153,900
- D. \$400,000

Non Current Assets	(550,000 - 100,000)	450,000
Receivables	(170,000 x 64%)	108,800
Inventory	(130,000 x 52%)	67,600
Overdraft	-180,000	-180,000
Payables	-120,000	-120,000
10% Loan Notes	(150,000 x 115%)	<u>-172,500</u>
		153,900

2. CDE Co. wants to value their company in order to raise more capital. They have a lot of intangible assets so wish to use the CIV method to put a value to these.

CDE has operating profit of \$400m and has a WACC of 12% and an asset base of \$950m.

OP Co. is a larger but similar firm which made an operating profit of \$1,500m on an asset base of \$7,500m.

What is the value of ABC Co. incorporating the CIV.

- A. \$2,700m
- B. \$5,867m
- C. \$1,750m
- D. \$9,250

Answer A

Proxy Firm ROA

$$1,500 / 7,500 = 20\%$$

Value Spread

		\$m
Operating Profit		400
Less		
Proxy POA x Asset Base	20% x 950	<u>190</u>
Value Spread		210

Calculate CIV

$$\text{Discount Value Spread at Cost of Capital} = 210 / 0.12 = \$1,750\text{m}$$

Value Firm

Assets (Capital Employed) + CIV

$$950 + 1,750 = \$2,700\text{m}$$

3. Bodo Co. has a P/E ratio of 13 and has just paid a dividend of \$3m. Bodo Co. has a dividend cover ratio of 6. What is the current market capitalisation of Bodo Co.?

- A. \$39m
- B. \$78m
- C. \$234m
- D. \$324m

Answer C

Dividend Cover x Dividend = Earnings

Earnings x P/E ratio = Value

$$6 \times \$3\text{m} = \$18\text{m}$$

$$\$18\text{m} \times 13 = \$234\text{m}$$

4. Tando Co. currently has earnings of \$300m and has share capital (50c shares) of \$400m. The total market capitalisation of Tando Co. is currently \$1,344m. What is the earnings yield for Tando Co.?

- A. 16.8%
- B. 37.5%
- C. 13.4%
- D. 22.3%

Answer D

$$\text{EPS} = \$300\text{m} / (400/0.5) = 37.5\text{c}$$

$$\text{Share Price} = \$1,344 / (400/0.5) = 168\text{c}$$

$$\text{Earnings Yield} = 37.5/168 = 22.3\%$$

5. Which of the following would be valid criticisms of using the P/E ratio to value a company?

- A. The earnings used to calculate it are usually stripped of exceptional items to ensure they are repeatable.
- B. It gives a broad valuation that is not based on the profit making capacity of the company.
- C. It tends to undervalue the firm as it uses figures from the financial statements.
- D. The use of the industry average P/E as a proxy may not equate to a true approximation.

Answer D

Lecture 20

Business Valuations

II

Illustration 1

ABC Company earned \$100,000 in cash inflows this year.

They expect this to increase in each of the next 5 years by 5% and after that to increase by 2% forever.

The company uses a cost of capital of 10%.

Calculate the value of the company using the present value of future cash flows method.

Solution

Period	1	2	3	4	5
Cash Inflows	105,000	110,250	115,763	121,551	127,628
Discount Rate 10%	0.909	0.826	0.751	0.683	0.621
PV Cash Flows	95,445	91,067	86,938	83,019	79,257
Total	435,725				

Period	Working	\$
Years 0 - 5	From Above	435,725
Post Year 5	$(127,628 \times (1+g)) / (K_e - g) \times 0.621$ $(127,628 \times 1.02) / (0.10 - 0.02) \times 0.621$	<u>1,010,526</u>
	Total Value of Company	<u>1,446,251</u>

Illustration 2

ABC Ltd. uses a time horizon of 12 years to forecast free cash flows.

They use a planning horizon of 3 years after which they expect cash flows to remain at a steady level.

The cash flows projected are as follows:

Year	\$
1	3m
2	5m
3	7m

The stock market value of debt is \$6m and the cost of capital is 10%.

Calculate the value of the firm and the value of the equity.

Solution

Year	\$	Discount Rate (10%)	PV
1	3m	0.909	2.73
2	5m	0.826	4.13
3	7m	0.751	<u>5.26</u>
4 to 12	7m	*5.759 x 0.751	30.28
*5.759 is the year 9 annuity factor to discount 9 years of \$7m per year then x 0.751 to discount for T3			
Value of the Firm			42.39
Value of Debt			-6.00
Value of Equity			36.39

Illustration 3

The following figures are relevant:

	\$m
Operating Profit	400
Depreciation	150
Increase in Working Capital	40
Capital Expenditure to replace assets	8
New Capital expenditure	18
Interest Paid	7
Loans Repaid	30
Tax Paid	120

Calculate the free cash flows before interest and dividends and then the free cash flows to equity.

Solution

	\$m
Operating Profit	400
Less Tax	-120
Add Depreciation	150
Operating Cash Flow	430
Replacement Capital Expenditure	-8
Incremental Capital Expenditure	-18
Incremental Working Capital	-40
Free Cash Flows	364
Interest Paid	-7
Loans Repaid	-30
Free Cash Flows to Equity	327

Illustration 4

ABC pays a constant dividend of 45c. It has 3m ordinary shares.

The shareholders require a return of 15%.

What is the Value of the business?

Solution

	Working	
Constant Dividend	In Question	45c
Required Return (Cost of Equity or Ke)	In Question	15%
Share Price (Dividend / Ke)	$45 / 0.15$	300c
No. Ordinary Shares	In Question	3m
Value of the business	$300c \times 3m$	\$9m

Illustration 5

A business has Share Capital made up of 50c shares of \$3 million
 Dividend per share (just paid) 30c
 Dividend paid four years ago 22c
 Required Return = 12%

Calculate the Value of the business using the dividend valuation method.

Solution

Working 1 - Dividend Growth	
Dividend Paid Now	30c
Dividend Paid 4 Years Ago	22c
Dividend Growth	$(\sqrt[4]{(30 / 22)})$ =1.08 =8%

Working 2 - Business Valuation	
Dividend Paid	30c
Required Return (Ke)	12%
Dividend Growth	8%
Share Price (Dividend (1+g)) / (Ke - g)	$(30 \times 1.08) / (0.12 - 0.08) = 810c$
No Ordinary Shares	$(\$3m / 0.5) = 6m$
Value of business	$(6m \times 810c) = \$48.6m$

Illustration 6

Opto Co. has generated post tax cash flows of \$400m with finance costs of \$50m which have not been included. The cost of equity is 16% and the WACC is 14%. The value of debt is \$669m.

Calculate the value of the company using:

- i. The cost of equity
- ii. The company WACC

Solution

i.

		\$m
Post Tax Cash Flows		400
Finance Costs		<u>-50</u>
AFTER Finance		350
Value of Equity	(350 / 0.16)	2,188
Value of Debt		<u>669</u>
Total Value		2,857

ii.

		\$m
Post Tax Cash Flows		400
Value of Company	(400 / 0.14)	2,857
Value of Debt		<u>669</u>
Value of Equity		2,188

Illustration 7

Asto Co. is an all equity financed listed company with a cost of equity of 12%.

Prissy Co. is unlisted and financed with a debt/equity ratio of 25/75. The cost of debt is 5% and the tax rate is 30%. Prissy Co. earned \$200m in post tax, after finance cash flows.

Calculate the value of shareholders equity in Prissy Co..

Solution

$$K_{eg} = K_{eu} + (K_{eu} - K_d) V_d(1-t)/V_e$$

$$K_{eg} = 12 + (12 - 5) 25(1-0.3)/75$$

$$K_{eg} = 13.63\%$$

$$\text{Value of Equity} = \$200m/0.1363 = \$1,467m$$

Objective Test Questions

1. ABC Company earned \$500,000 in cash inflows this year.

They expect this to increase in each of the next 5 years by 6% and after that to increase by 3% forever.

The company uses a cost of capital of 12%.

What will the value of the company be using the present value of future cash flows method?

- A. \$2,125,785
- B. \$6,467,659
- C. \$4,341,874
- D. \$9,783,412

Answer B

Period	1	2	3	4	5
Cash Inflows	530,000	561,800	595,508	631,238	669,113
Discount Rate 12%	0.893	0.797	0.712	0.636	0.567
PV Cash Flows	473,214	447,864	423,871	401,163	379,673
Total	2,125,785				

Period	Working	\$
Years 0 - 5	From Above	2,125,785
Post Year 5	$(669,113 \times (1+g)) / (K_e - g) \times 0.567$ $(669,113 \times 1.03) / (0.12 - 0.03) \times 0.567$	<u>4,341,874</u>
	Total Value of Company	<u>6,467,659</u>

2. ABC Ltd. uses a time horizon of 20 years to forecast free cash flows.

They use a planning horizon of 5 years after which they expect cash flows to remain at a steady level.

The cash flows projected are as follows:

Year	\$
1	3m
2	5m
3	7m
4	8m
5	10m

The stock market value of debt is \$13m and the cost of capital is 12%.

What is the value of the firm on a discounted cash flow basis?

- A. \$31.3m
- B. \$3m
- C. \$44.3m Wrong
- D. \$23.64m

Answer C

Year	\$m	Discount Rate (12%)	PV
1	3	0.893	2.68
2	5	0.797	3.99
3	7	0.712	4.98
4	8	0.636	5.08
5	10	0.567	5.67
6 to 20	10	*5.759 x 0.567	32.65
*5.847 is the year 15 annuity factor to discount 15 years of \$10m per year then x 0.567 to discount for T5			
Value of the Firm			44.30
Value of Debt			-13.00
Value of Equity			31.30

3. A business has Share Capital made up of 50c shares of \$5 million
 Dividend per share (just paid) 40c
 Dividend paid four years ago 28c
 Required Return = 14%

What is the value of the business using the dividend valuation method.

Solution

Working 1 - Dividend Growth	
Dividend Paid Now	40c
Dividend Paid 4 Years Ago	28c
Dividend Growth	$(\sqrt[4]{40 / 28})$ $= 1.09$ $= 9\%$

Working 2 - Business Valuation	
Dividend Paid	40c
Required Return (Ke)	14%
Dividend Growth	9%
Share Price (Dividend (1+g)) / (Ke - g)	$(40 \times 1.09) / (0.14 - 0.09) = 872c$
No Ordinary Shares	$(\$5m / 0.5) = 10m$
Value of business	$(10m \times 810c) = \$81m$

4. Lopo Co. is an all equity financed listed company with a cost of equity of 11%.

Salto Co. is unlisted and financed with a debt/equity ratio of 20/80. The cost of debt is 3% and the tax rate is 25%. Prissy Co. earned \$100m in post tax, after finance cash flows.

Calculate the value of shareholders equity in Salto Co..

Solution

$$K_{eg} = K_{eu} + (K_{eu} - K_d) V_d(1-t)/V_e$$

$$K_{eg} = 11 + (11 - 3) 20(1-0.25)/80$$

$$K_{eg} = 12.5\%$$

$$\text{Value of Equity} = \$100m/0.125 = \$800m$$

5. Which of the following statements are not correct?

- A. Valuing a business on the basis of net assets is likely to lead to an undervaluation.
- B. The cost of equity in an un-g geared firm is lower than the cost of equity in a geared firm.
- C. Internal management are likely to over-estimate the value of the company.
- D. Valuing a start-up business will be easiest using the dividend valuation method.

Answer D

Start-up businesses are unlikely to pay a dividend as they conserve cash to build the businesses.

Lecture 21

CAPM

Illustration 1

Company A has a Beta of 1.2.

Government bonds are currently trading at 4%.

The average return than investors in the market can expect is 15%.

Calculate the Cost of Equity using CAPM.

Solution

Rf (Risk Free Rate)	4
Rm (Ave Return on the Market)	15
Beta	1.2
$Ke = Rf + \beta(Rm - Rf)$	$(4 + 1.2(15 - 4)) = 17.2\%$

Illustration 2

Company A has a Beta of 1.2

Company B has a Beta of 1

Government bonds are currently trading at 5%.

The average return than investors in the market can expect is 12%.

Calculate the Cost of Equity using CAPM for each company.

Solution

	Company A	Company B
Rf (Risk Free Rate)	5	5
Rm (Ave Return on the Market)	12	12
Beta	1.2	1
$Ke = Rf + \beta(Rm - Rf)$	$(5 + 1.2(12 - 5)) = 13.4\%$	$(5 + 1(12 - 5)) = 12\%$
Notice that when Beta is 1 (Company B) Ke is 12% which is the same as the average return on the market.		
Also notice that a higher Beta of 1.2 gives a higher Ke of 13.4% showing that a higher Beta means higher risk.		

Illustration 3

Company A has a Beta of 1.3.

Company B has a Beta of 1.2.

Government bonds are currently trading at 5%.

The average market risk premium is 6%.

Calculate the Cost of Equity using CAPM for each company.

Solution

	Company A	Company B
Rf (Risk Free Rate)	5	5
Rm - Rf (Ave Market Risk Premium)	6	6
Beta	1.3	1.2
Ke = Rf + β (Rm - Rf)	$(5 + 1.3(6)) = 12.8\%$	$(5 + 1.2(6)) = 12.2\%$
Remember to look out for the market risk PREMIUM as this is always (Rm - Rf) rather than Rm (Average return on the market)		
Again notice that a higher Beta leads to a higher Ke i.e. more risk.		

Objective Test Questions

1. Which of the following statements about 'systematic risk' are correct when referring to the capital assets pricing model?

- A. Systematic risk affects the overall market, not just a particular stock or industry.
- B. Systematic risk is company or industry specific risk.
- C. Systematic risk is risk that can be diversified away by investors.
- D. Systematic risk is determined by the gearing of the company.

Answer A

2. Company Alpha has a Beta of 1.1. Government bonds are currently trading at 4%. The average market risk premium is 7%.

What is the cost of equity using the capital assets pricing model?

- A. 12.2%
- B. 11.7%
- C. 7.3%
- D. 11.4%

Answer B

3. Which of the following statements about 'unsystematic risk' are correct when referring to the capital assets pricing model?

- A. Unsystematic risk affects the overall market, not just a particular stock or industry.
- B. Unsystematic risk is company or industry specific risk.
- C. Unsystematic risk is risk that can be diversified away by investors.
- D. Unsystematic risk is determined by the gearing of the company.

Answer B

4. Which of the following are downsides of the capital assets pricing model (CAPM)?

- 1. The Beta used is calculated using historic data.
- 2. The dividend growth is based on historic data.
- 3. The assumptions it makes are not necessarily reflected in reality.
- 4. The share price fluctuates on a daily basis.

- A 1 and 2 only
- B 1 and 3 only
- C 2 and 3 only
- D 1 and 4 only

Answer B

Lecture 22

Risk Adjusted WACC

Illustration 1

Company A intends to undertake a project in an unrelated industry.

The following details are relevant:

Item	Company A	Proxy Company
Equity Beta (β_e)	1.2	1.4
Value of Equity	1000	800
Value of Debt	400	500

The risk free rate is 4%.

The average return on the market is 12%.

The post tax cost of debt is 7%.

Calculate the risk adjusted WACC to be used in evaluating the project.

Ignore Tax

Solution

Working 1 - Un-gear the proxy β_e to get β_a .

Proxy Equity Beta	1.4
Value of Equity of Proxy	800
Value of Debt of Proxy	500
$\beta_u = \beta_g(V_e / (V_e + V_d))$	$1.4 (800 / (800 + 500)) = 0.86$

Working 2 - Re-gear β_a with our capital structure

β_a	0.86
Value of Equity of Company A	1000
Value of Debt of Company A	400
$\beta_g = \beta_u + (\beta_u - \beta_d) (V_d / V_e)$	$0.86 + (0.86 \times (400 / 1000)) = 1.20$

Working 3 - Fill into CAPM

Rf (Risk Free Rate)	4
Rm (Ave return on the market)	12
Beta	1.2
$K_e = R_f + \beta(R_m - R_f)$	$(4 + 1.2(12 - 4)) = 13.6\%$

Working 4 - Risk Adjusted WACC

Item	Market Value	Weighting	Cost	Ave
Equity	1000	(1000 / 1400)	13.6	9.71
Debt	400	(400 / 1400)	7	2.00
	<u>1400</u>		WACC	<u>11.71</u>

Illustration 2

Company A intends to undertake a project in an unrelated industry.

The following details are relevant:

Item	Company A	Proxy Company
Equity Beta (β_e)	1.1	1.3
Value of Equity	1200	900
Value of Debt	500	450

The risk free rate is 4%.

The average return on the market is 12%.

The tax rate is 30%.

The post tax cost of debt is 8%.

Calculate the risk adjusted WACC to be used in evaluating the project.

Solution

Working 1 - Un-gear the proxy β_e to get β_a .

Proxy Equity Beta	1.3
Value of Equity of Proxy	900
Value of Debt of Proxy	450
$\beta_u = \beta_g(V_e / (V_e + V_d \times 1-t))$	$1.3 (900 / (900 + (450 \times 0.7))) = 0.96$

Working 2 - Re-gear β_a with our capital structure

β_a	0.96
Value of Equity of Company A	1200
Value of Debt of Company A	500
$\beta_g = \beta_u + (\beta_u - \beta_d) (V_d (1-t) / V_e)$	$0.96 + (0.96 \times 500(1-0.3)/1200) = 1.24$

Working 3 - Fill into CAPM

Rf (Risk Free Rate)	4
Rm (Ave return on the market)	12
Beta	1.24
$K_e = R_f + \beta(R_m - R_f)$	$(4 + 1.24(12 - 4)) = 13.92\%$

Working 4 - Risk Adjusted WACC

Item	Market Value	Weighting	Cost	Ave
Equity	1200	(1200 / 1700)	13.92	9.83
Debt	500	(500 / 1700)	8	2.35
	<u>1700</u>		WACC	<u>12.18</u>

Illustration 3

Company A intends to undertake a project in an unrelated industry.

The following details are relevant:

Item	Company A	Proxy Company
Equity Beta (β_e)	1.2	1.4
Value of Equity	1500	1300
Value of Debt	300	600

The risk free rate is 4%.

The average return on the market is 12%.

The tax rate is 30%.

The post tax cost of debt is assumed to be the same as the risk free rate.

Calculate the risk adjusted WACC to be used in evaluating the project using the previous method we have used and then Miller & Modigliani's formula.

Solution

Working 1 - Un-gear the proxy β_e to get β_a .

Proxy Equity Beta	1.4
Value of Equity of Proxy	1300
Value of Debt of Proxy	600
$\beta_u = \beta_g(V_e / (V_e + V_d \times 1-t))$	$1.3 (1300 / (1300 + (600 \times 0.7))) = 1.05$

Working 2 - Re-gear β_a with our capital structure

β_a	1.05
Value of Equity of Company A	1500
Value of Debt of Company A	300
$\beta_g = \beta_u + (\beta_u - \beta_d) (V_d (1-t) / V_e)$	$1.05 + (1.05 \times 300(1-0.3)/1500) = 1.2$

Working 3 - Fill into CAPM

Rf (Risk Free Rate)	4
Rm (Ave return on the market)	12
Beta	1.2
$K_e = R_f + \beta(R_m - R_f)$	$(4 + 1.2(12 - 4)) = 13.6\%$

Working 4 - Risk Adjusted WACC

Item	Market Value	Weighting	Cost	Ave
Equity	1500	$(1500 / 1800)$	13.6	11.33
Debt	300	$(300 / 1800)$	$4(1-t) = 2.8$	0.47
	<u>1800</u>		WACC	11.80

Solution

Working 1 - Un-gear the proxy β_e to get β_a .

Proxy Equity Beta	1.4
Value of Equity of Proxy	1300
Value of Debt of Proxy	600
$\beta_u = \beta_g(V_e / (V_e + V_d \times 1-t))$	1.3 (1300 / (1300 + (600 x 0.7))) = 1.05

Working 2 - Fill into CAPM to get K_{eu}

R_f (Risk Free Rate)	4
R_m (Ave return on the market)	12
Beta	1.05
$K_e = R_f + \beta(R_m - R_f)$	(4 + 1.05(12 - 4)) = 12.4%

Working 3 - Risk Adjusted WACC

$$WACC = K_{eu} [1 - (V_d t / (V_e + V_d))]$$

$$WACC = 12.4 [1 - (0.30 \times 300 / (1500 + 300))]$$

$$K_{adj} = 11.8$$

Illustration 4

	Company A	Company B
Debt/Equity	1/3	1/4
Equity Beta	1.2	
Debt Beta	0.3	0.3

Calculate the Equity Beta for Company B.

Solution

Ungear Equity Beta Company A:

$$B_a = (1.2 (3/4)) + (0.3 (1/4)) = 0.9 + 0.075 = 0.975$$

Regear Asset Beta for Company B:

$$B_e = 0.975 + ((0.975 - 0.3) 1/4) = 1.14$$

Objective Test Questions

1. Company Alpha is financed with \$1,000 of equity and \$400 of debt and intends to undertake a project in an unrelated industry. They have identified Horizon Co. as a company in the new industry with \$700 of equity and \$300 of debt. Alpha Co. has a Beta of 1.3 whereas Horizon Co. has a Beta of 1.2. The risk free rate is 4% and the average return on the market is 12%. The tax rate is 30%.

Which of the following would be the project specific discount rate for Alpha Co. when entering the new industry?

- A. 12.34%
- B. 10.25%
- C. 11.12%
- D. 13.42%

Answer D

Working 1 - Un-gear the proxy β_e to get β_a .

Proxy Equity Beta	1.2
Value of Equity of Proxy	700
Value of Debt of Proxy	300
$\beta_a = \beta_e(V_e / (V_e + (V_d \times 1-t)))$	$1.2 (700 / (700 + (300 \times 0.7))) = 0.92$

Working 2 - Re-gear β_a with our capital structure

β_a	0.92
Value of Equity of Company A	1000
Value of Debt of Company A	400
$\beta_e = \beta_a (V_e + (V_d \times 1-t) / V_e)$	$0.92 ((1000 + (400 \times 0.7)) / 1000) = 1.18$

Working 3 - Fill into CAPM

Rf (Risk Free Rate)	4
Rm (Ave return on the market)	12
Beta	1.18
$Ke = Rf + \beta(Rm - Rf)$	$(4 + 1.18(12 - 4)) = 13.42\%$

2.

	Company A	Company B
Debt/Equity	20/80	40/60
Equity Beta	1.15	
Debt Beta	0.5	0.5

What is the Equity Beta for Company B.

- A. 1.12
- B. 0.92
- C. 0.2
- D. 1.53

Answer D

Solution

Ungear Equity Beta Company A:

$$Beu = (1.15 (80/100)) + (0.5 (20/100)) = 0.92 + 0.1 = 1.02$$

Regear Asset Beta for Company B:

$$Beg = 1.02 + ((1.02 - 0.5) 40/60) = 1.36$$

F3 CIMA Q & A

3. Company A	Company B	
Debt/Equity	30/70	10/90
Equity Beta	1.3	
Debt Beta	0.4	0.4

Tax rate is 30%

What is the Equity Beta for Company B.

- A. 1.12
- B. 0.92
- C. 0.2
- D. 1.53

Answer D

Solution

Ungear Equity Beta Company A:

$$Beu = (1.3 (70/(30 \times (1-0.3)) + 70)) + (0.4 (30(1-0.3)/(30(1-0.3) + 70))$$

$$Beu = 1 + 0.09 = 1.09$$

Regear Asset Beta for Company B:

$$Beg = 1.09 + ((1.09 - 0.4) 10(1-0.3)/90) = 1.14$$

Lecture 24 - Mergers & Acquisitions I

Objective Test Questions

1. Entities will often diversify into unrelated industries in order to reduce risk by investment in uncorrelated industries. Which of the following statements is NOT a valid criticism of this strategy?
- A. Investors can diversify their own portfolios if they want to spread their investment risk.
 - B. Investors will have invested in the company to get exposure to the current industry.
 - C. Management may not have the expertise in the unrelated industry required to make the investment successful.
 - D. The current management in the target entity may not want the acquisition to happen.

Answer D

2. Which of the following is unlikely to be a valid reason for undertaking a merger or acquisition?
- A. The target entity has substantial assets and a low share price.
 - B. An entity identified previously as a potential target has released a popular new product leading to an increase in their share price.
 - C. The target entity has a patented manufacturing process that will improve the output of our factory by 30%.
 - D. The combined entity will be able to take advantage of a bulk buying discount of 10% on all raw materials.

Answer B

3. Many mergers and acquisitions are subsequently found to have reduced shareholder wealth rather than increase it. Which of the following is most likely to result in such a situation.
- A. The predator company has an overvalued share price used to purchase the target in a share for share exchange.
 - B. The combined entity experiences operating synergies.
 - C. The target entity has recently reduced their dividend payout ratio to 30% from 50%.
 - D. The target and predator entities have are both bureaucratic and been established for over 50 years.

Answer D

4. Which of the following is not one of Drucker's 'Golden Rules' for integration of a merged or acquired entity into the group?

- A. Ensure that there are common goals across the combined entity.
- B. Treat the products and services in the target entity with respect.
- C. Replace the current management with new board members.
- D. Ask 'What can we do for them?' to integrate more smoothly.

Answer C

5. Which of the following would NOT be a considerations when considering a take-over target?

- A. The country in which the potential target is located.
- B. The regulations around competition in the locations where the combination intends to operate.
- C. The ability of the current management team in the target entity.
- D. The potential effect on the share price when the intention to merge is announced to the stock market.

Answer C (We will probably replace them in any case)

Lecture 25 - Mergers & Acquisitions II

Illustration 1

Company A has 100m shares at \$3 each. Company B has 50m shares of \$1 each.

Company A makes an offer of 1 new shares for every 5 held in B and has worked out that the synergies available are valued at \$20m

Calculate the expected value of a share in the combined company.

Solution

1. Value of Company A = $(100\text{m} \times \$3) = \300m
2. Value of Company B = $(50\text{m} \times \$1) = \50m
3. Value of Combination = $(300 + 50 + 20^*) = \$370\text{m}$
*Synergies
4. No. Shares = $100 + (1/5) \times 50 = 110\text{m}$
5. Value of one share = $370/110 = \$3.45$

Illustration 2

	Post Tax Profit	P/E Ratio	Pre Aq. Value
Company A	\$150m	10	\$1500m
Company B	\$10m	7	\$70m

Estimating the post acquisition value of the combined business is done by applying the P/E ratio of Company A to the combined earnings of the new combination.

Solution

Value of individual companies = (1,500 + 70) \$1,570

Value of Combination = $10 \times (150\text{m} + 10\text{m}) = \$1,600\text{m}$

Value of Synergies = $1,600\text{m} - 1,570\text{m} = \30m

Objective Test Questions

1. Which of the following statements is INCORRECT?

- A. Synergies are always created when two companies merge.
- B. Operating synergies are savings made through efficiencies or improvements in operation after merger.
- C. Financial synergies such as diversification can increase shareholder wealth.
- D. An entity with a significant cash surplus may be under pressure to identify a target for takeover.

Answer A

2. Adro Co. has 4m shares in issue at a current share price of \$3.20. Basto Co. has 2m shares valued at \$2.10. Adro Co. has identified Basto Co. as a take-over target and has proposed offering a 1 for 2 share exchange. They feel that synergies of \$820,000 will be created if the merger goes ahead. What will the share price in the combination be?

- A. \$17.8
- B. \$3.56
- C. \$3.40
- D. \$2.42

Answer B

- 1. Value of Asto = $(4m \times 3.20) = \$12.8m$
- 2. Value of Basto = $(2m \times \$2.10) = \$4.2m$
- 3. Value of Combination = $(12.8 + 4.2 + 0.8^*) = \$17.8m$
*Synergies
- 4. No. Shares = $4m + (1/2) \times 2m = 5m$
- 5. Value of one share = $17.8/5m = \$3.56$

3.	Post Tax Profit	P/E Ratio
Company A	\$400m	15
Company B	\$50m	12

Estimate the post acquisition value of the synergies created by the combination using the 'bootstrapping method.

- A. \$175m
- B. \$6,600m
- C. \$6,750m
- D. \$150m

Answer D

Solution

Value of individual companies = $(400 \times 15) + (50 \times 12)$ \$6,600m

Value of Combination = $15 \times (\$400m + \$50m) = \$6,750m$

Value of Synergies = $\$6,600m - \$6,750m = \$150m$

4. Groucho Co. has just made a bid for Marx Co. of \$4.53 per share which has been announced to the stock exchange.

Which THREE of the following defence methods could be employed by the board of Marx Co. to prevent the take-over?

- A. Poison Pill Strategy
- B. Appeal to the shareholders
- C. White Knight Strategy
- D. Super majority for takeover
- E. Counter-bid

Answer B,C, E

5. Which of the following statements related to Management Buy Outs is NOT correct?

- A. The MBO may result in greater flexibility as the business is no longer constrained by head office.
- B. The management may be more likely to make the business successful as they have more motivation to succeed.
- C. An MBO should lead to greater economies of scale due to increased buying power.
- D. MBOs are often financed by venture capital and mezzanine finance.

Answer C (Going it alone may lead to dis-economies of scale)