Business Valuations

1. Objectives

1.1 Identify and discuss reasons for valuing businesses and financial assets.

1.2 Identify information requirements for the purposes of carrying out a valuation in a scenario.

1.3 Value a company using the statement of financial position, NRV and replacement cost asset-based valuation models.

1.4 Value a share using the dividend valuation model (DVM), including the dividend growth model.

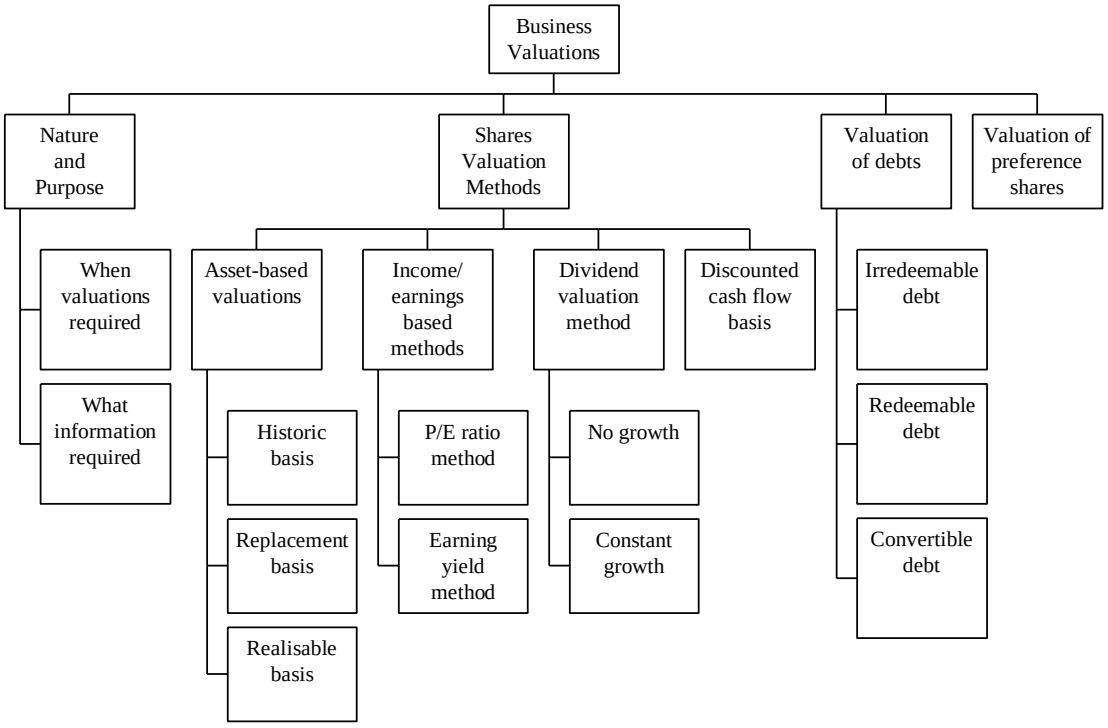
1.5 Use the capital asset pricing model (CAPM) to help value a company's shares.

1.6 Value a company using the P/E ratio income-based valuation model.

1.7 Value a company using the earnings yield income-based valuation model.

1.8 Value a company using the discounted cash flow income-based valuation model.

1.9 Calculate the value of irredeemable debt, redeemable debt, convertible debt and preference shares.



2. The Nature and Purpose of Business Valuations

(A) When valuations are required

2.1 A share valuation will be necessary:

(a) For **quoted companies**, when there is a **takeover bid** and the offer price is an estimated fair value in excess of the current market price of the shares.

(b) For **unquoted companies**, when:

(i) the company wishes to **go public** and must fix an issue price for its shares.

(ii) there is a scheme of **merger**.

(iii) shares are **sold**.

(iv) shares need to be valued for the **purposes of taxation**.

(v) shares are **pledged** as collateral for a loan.

(c) For **subsidiary companies**, when the group's holding company is **negotiating the sale of the subsidiary** to a management buyout or to an external buyer.

(d) For **any company**, where a s**hareholder wishes to dispose of his or her holding**.

(e) For **any company**, when the company is being **broken up in a liquidation situation** or the company **needs to obtain finance**, or re-finance current debt.

(B) Information requirements for valuation

2.2 There is wide range of information that will be needed in order to value a business.

(a) Financial statements: statement of financial positions, income statements, statements of shareholders equity for the past five years.

(b) Summary of non-current assets list and depreciation schedule.

(c) Aged accounts receivable summary.

(d) Aged accounts payable summary.

(e) List of marketable securities.

(f) Inventory summary.

(g) Details of any existing contracts, e.g. leases, supplier agreements.

(h) List of shareholders with number of shares owned by each.

(i) Budgets or projections, for a minimum of five years.

(j) Information about the company's industry and economic environment.

(k) List of major customers by sales.

(l) Organization chart and management roles and responsibilities.

2.3 This list is not exhaustive and there are **limitations of some of the information**. For example, balance sheet values of assets may be out of date and unrealistic, projections may be unduly optimistic or pessimistic and much of the information used in **business valuation is subjective**.

3. Shares Valuation

(A) Asset-based valuations

3.1

When asset-based valuations are useful?
(a) For **asset stripping** (資產剝離) The **process of buying an undervalued company** with the **intent to sell off its assets for a profit**. The individual assets of the company, such as its equipment and property, may be more valuable than the company as a whole due to such factors as poor management or poor economic conditions. For example, imagine that a company has three distinct businesses: trucking, golf clubs and clothing. If the value of the company is currently $100 million but another company believes that it can sell each of its three businesses to other companies for $50 million each, an asset stripping opportunity exists. The purchasing company will then purchase the three-business company for $100 million and sell each company off, potentially making $50 million. (b) To **identify a minimum price in a takeover** Shareholders will be reluctant to sell at a price less than the net asset valuation even if the prospect for income growth is poor. A standard defensive tactic in a takeover battle is to revalue balance sheet assets to encourage a higher price. In a normal going-concern situation we value the assets at their replacement cost. (c) To **value property investment companies** The market value of **investment property has a close link to future cash flows and share values**, i.e. **discounted rental income** determines the **value of property assets** and thus **the company**.

3.2 Under this method of valuation, the **value of a share** in a particular class is **equal to the net tangible assets attributable to that class**, divided by the number of shares in the class. **Intangible assets** (including goodwill) **should be excluded**, **unless they have a market value** (for example patents and copyrights, which could be sold).

3.3

Example 1

The summary statement of financial position of ABC Co is as follows.

	$	$
Non-current assets		
Land and buildings		160,000
Plant and machinery		80,000
Motor vehicles		20,000
		260,000
Goodwill		20,000
Current assets		
Inventory	80,000	
Receivables	60,000	
Short-term investments	15,000	
Cash	5,000	160,000
Total assets		440,000
Equity and liabilities		
Equity		
Ordinary shares of $1		80,000
Reserves		140,000
4.9% preference shares of $1		50,000
		270,000
Non-current liabilities		
12% loan notes	60,000	
Deferred taxation	10,000	70,000
Current liabilities		
Payables	60,000	
Taxation	20,000	
Proposed ordinary dividend	20,000	100,000
		440,000

What is the value of an ordinary share using the net assets basis of valuation?

Solution:

If the figures given for asset values are not questioned, the valuation would be as follows.

	$	$
Total value of assets less current liabilities		340,000
Less: Intangible asset (goodwill)		20,000
Total value of assets less current liabilities		320,000
Less: Preference shares	50,000	
Loan notes	60,000	
Deferred taxation	10,000	120,000
Net asset value of equity		200,000
No. of ordinary shares		80,000
Value per share		$2.50

3.4 Choice of valuation bases – the difficulty in an asset valuation method is establishing the asset values to use. Values ought to be realistic. The figure attached to an individual asset may vary considerably depending on whether it is valued on a **going concern or a break-up basis**.

(a) **Historic basis – unlikely to give a realistic value** as it is dependent upon the business's depreciation and amortization policy.

(b) **Replacement basis** – if the assets are to be **used on an on-going basis**.

(c) **Realisable basis** – if the **assets are to be sold**, or **the business as a whole broken up**. This won't be relevant if a minority shareholder is selling his stake, as the assets will continue in the business's use.

(B) Income/earnings based methods

3.5 Income-based methods of valuation are of **particular use when valuing a majority shareholding**.

(a) Price Earnings (P/E) ratio method

3.6

P/E Ratio Method

This is a common method of **valuing a controlling interest** in a company, **where** the **owner can decide on dividend and retentions policy**. The P/E ratio relates earning per share to a share's value.

Formula:

P/E = Market price per share / Earnings per share (EPS)

This can then be used to value shares in unquoted companies as:

Market value (or market capitalization) of company = total earnings x P/E ratio

Value per share = EPS x P/E ratio

Using an **adjusted P/E multiple from a similar quoted company** (or industry average).

3.7

Example 2

Catcher wishes to make a takeover bid for the shares of an unquoted company, Mayfly. The earnings of Julyfly. The earnings of Julyfly over the past five years have been as follows.

2006	$50,000	2009	$71,000
2007	$72,000	2010	$75,000
2008	$68,000		

The average P/E ratio of quoted companies in the industry in which Julyfly operates is 10. Quoted companies which are similar in many respects to Julyfly are:

(a) Bumblebee, which has a P/E ratio of 15, but is a company with very good growth prospects.

(b) Wasp, which has had a poor profit record for several years, and has a P/E ratio of 7.

What would be a suitable range of valuations for the shares of Julyfly?

Solution:

(a) **Earnings**. Average earnings over the last five years have been $67,200, and over the last four years $71,500. There might appear to be some growth prospects, but estimates of future earnings are uncertain.

A low estimate of earnings in 2011 would be, perhaps, $71,500.

A high estimate of earnings might be $75,000 or more. This solution will use the most recent earnings figure of $75,000 as the high estimate.

(b) **P/E ratio**. A P/E ratio of 15 (Bumblebee's) would be much too high for Julyfly, because the growth of Julyfly earnings is not as certain, and Julyfly is an unquoted company.

On the other hand, Julyfly's expectations of earnings are probably better than those of Wasp. A suitable P/E ratio might be based on the industry's average, 10; but since Julyfly is an unquoted company and therefore more risky, a lower P/E ratio might be more appropriate: perhaps 60% to 70% of 10 = 6 or 7, or conceivably even as low as 50% of 10 = 5

The valuation of Julyfly's shares might therefore range between:

High P/E ratio and high earnings: 7 x $75,000 = $525,000; and
Low P/E ratio and low earnings: 5 x $71,500 = $357,500.

3.8 The **basic choice for a suitable P/E ratio** will be that of a **quoted company of comparable size in the same industry**.

3.9 However, since share price are **broadly based on expected future earnings** a P/E ratio – based on a single year's reported earnings – may be very different for companies in the same sector, carrying on the same systematic risk.

3.10 For example, a **high P/E ratio** may indicate:

(a) **growth stock** – the share price is high because continuous high rates of growth of earnings are expected from the stock.

(b) **no growth stock** – the PE ratio is based on the last reported earnings, which perhaps were exceptionally low yet the share price is based on future earnings which are expected to revert to a 'normal' relatively stable level.

(c) **takeover bid** – the share price has risen pending a takeover bid.

(d) **high security share** – shares in property companies typically have low income yields but the shares are still worth buying because of the prospects of capital growth and level of security.

3.11 Similarly, a low P/E ratio may indicate:

(a) **losses expected** – future profits are expected to fall from their most recent levels

(b) **share price low** – as noted previously, share prices may be extremely volatile – special factors, such as a strike at a manufacturing plant of a particular company, may depress the share price and hence the PE ratio.

3.12

Problems with using P/E ratio
(a) **Finding** a **quoted company** with a **similar range of activities** may be **difficult**. **Quoted companies** are often **diversified**.
(b) A **single year's P/E ratio** may **not be a good basis**, if earnings are volatile, or the quoted company's share price is at an abnormal level, due for example to the expectation of a takeover bid.
(c) If a P/E ratio trend is used, then **historical data** will be being used to value how the unquoted company will do in the future.
(d) The quoted company may have a **different capital structure** to the unquoted company.

3.13 When one company is thinking about taking over another, it should look at the target company's **forecast earnings**, **not just its historical results**. Forecasts of earnings growth should only be used if:

(a) There are good reasons to believe that earnings growth will be achieved.

(b) A reasonable estimate of growth can be made.

(c) Forecasts supplied by the target company's directors are made in good faith and using reasonable assumptions and fair accounting policies.

(b) Earning yield method

3.14

Earning Yield Method

Another income based method is the earnings yield method.

$$\text{Earnings yield} = \frac{\text{EPS}}{\text{Market price per share}} \times 100\%$$

This method is effectively a variation on the P/E method (the earnings yield being the reciprocal of the P/E ratio), using an appropriate earnings yield effectively as a discount rate to value the earnings:

$$\text{Market value} = \frac{\text{Earnings}}{\text{Earnings yield}}$$

3.15

Example 3

Company A has earnings of $300,000. A similar listed company has an earnings yield of 12.5%.

Company B has earnings of $420,500. A similar listed company has a P/E ratio of 7.

Estimate the value of each company.

Solution:

Company A: $\$300{,}000 \times \frac{1}{0.125} = \$2{,}400{,}000$

Company B: $420,500 x 7 = $2,943,500

(C) Dividend valuation model (DVM)

3.16

Dividend Valuation Model

The dividend valuation model is based on the theory that an equilibrium price for any share on a stock market is:

(a) The **future expected stream of income** from the security.

(b) **Discounted** at a suitable **cost of capital**.

Equilibrium market price is thus a **present value of a future expected income stream**. The **annual income stream** for a share is the **expected dividend every year in perpetuity**.

The basic dividend-based formula for the market value of shares is expressed in the DVM (**assume no growth**) as follows:

Market value (ex div) $P_0 = \frac{D}{(1+K_e)} + \frac{D}{(1+K_e)^2} + ... + \frac{D}{(1+K_e)^\infty} = \frac{D}{K_e}$

If the dividend has **constant growth**, **dividend growth model** can be applied:

$$P_0 = \frac{D_0(1+g)}{(1+K_e)} + \frac{D_0(1+g)^2}{(1+K_e)^2} + ... + \frac{D_0(1+g)^\infty}{(1+K_e)^\infty} = \frac{D_0(1+g)}{K_e - g} = \frac{D_1}{K_e - g}$$

Where: D_0 = Current year's dividend

g = Growth rate in earnings and dividends

$D_0(1+g) = D_1$ = Expected dividend in one year's time

K_e = Shareholders' required rate of return

P_0 = Market value excluding any dividend currently payable

3.17

Example 4

A company paid a dividend of $250,000 this year. The current return to shareholders of companies in the same industry is 12%, although it is expected that an additional risk premium of 2% will be applicable to the company, being a smaller and unquoted company. Compute the expected valuation of the company, if:

(a) The current level of dividend is expected to continue into the foreseeable future, or

(b) The dividend is expected to grow at a rate of 4% pa into the foreseeable future.

Solution:

K_e = 12% + 2% = 14%; D_0 = $250,000; g = 4%

(a) $P_0 = \frac{D_0}{K_e} = \frac{\$250,000}{14\%} = \$1,785,714$

(b) $P_0 = \frac{D_0(1+g)}{K_e - g} = \frac{\$250,000 \times (1+4\%)}{14\% - 4\%} = \$2,600,000$

3.18

Example 5

A company has the following financial information available:
Share capital in issue: 4 million ordinary shares at a par value of 50c.
Current dividend per share (just paid) 24c.
Dividend four year ago 15.25c.
Current equity beta 0.80.

You also have the following market information:
Current market return 15%.
Risk-free rate 8%.

Find the market capitalization of the company.
(Market capitalization is found by multiplying its current share price by the number of shares in issue.)

Solution:

The formula: $P_0 = \frac{D_0(1+g)}{K_e - g}$

D_0 = 24c

g can be found by extrapolating from past dividends:

15.25 x $(1 + g)^4$ = 24

g = 12%

K_e can be found using CAPM = $R_f + \beta(R_m - R_f)$

K_e = 8% + 0.8 x (15% – 8%) = 13.6%

Therefore,

$$P_0 = \frac{24(1+12\%)}{13.6\% - 12\%} = 1{,}680c = \$16.80$$

3.19

Example 6

A company has the following financial information available:
Share capital in issue: 2 million ordinary shares at a par value of $1.
Current dividend per share (just paid) 18c.
Current EPS 25c.
Current return earned on assets 20%
Current equity beta 1.1.

You also have the following market information:

Current market return 12%.
Risk-free rate 5%.

Find the market capitalization of the company.

Solution:

The formula: $P_0 = \frac{D_0(1+g)}{K_e - g}$

D_0 = 18c

g can be found by **Gordon's Growth Model**:

g = r x b

r = 20%

If dividend per share of 18c are paid on EPS of 25c, then the payout ratio is 18/25 = 72%. The retention ratio is therefore 28%.

So b = 0.28

Therefore g = 0.2 x 0.28 = 0.056

K_e can be found using CAPM = $R_f + \beta(R_m - R_f)$

K_e = 5% + 1.1 x (12% – 5%) = 12.7%

Therefore,

$$P_0 = \frac{18(1+0.056)}{0.127-0.056} = 268c = \$2.68$$

The market capitalization is therefore = 2m x \$2.68 = \$5.36m

3.20

Assumptions of Dividend Models

The dividend models are underpinned by a number of assumptions that you should bear in mind.

(a) **Investors act rationally and homogenously**. The model **fails to take into account the different expectations of shareholders**, nor how much are motivated by dividends vs future capital appreciation on their shares.

(b) The D_0 figure used does **not vary significantly** from the **trend of dividends**. If **D_0 does appear to be a rogue figure**, it may be **better to use an adjusted trend figure**, calculated on the basis of the past few years' dividends.

(c) The **estimates of future dividends and prices used**, and also **the cost of capital are reasonable**. As with other methods, it may be difficult to make a confident estimate of the cost of capital. Dividend estimates may be made from historical trends that may not be a good guide for a future, or derived from uncertain forecasts about future earnings.

(d) Investors' attitudes to receiving different cash flows at different times can be modeled using **discounted cash flow arithmetic**.

(e) Directors **use dividends to signal the strength of the company's position** (however companies that pay zero dividends do not have zero share values).

(f) **Dividends** either show **no growth or constant growth**. If the growth rate is calculated using g = b x r, then the model assumes that b and r are constant.

(g) **Other influences** on share prices are **ignored**.

(h) The company's **earnings will increase sufficiently** to maintain dividend growth levels.

(i) The **discount rate** used **exceeds the dividend growth rate**.

(D) Discounted cash flow basis

3.21 This method of share valuation may be appropriate when one company intends to buy the assets of another company and to make further investments in order to improve cash flows in the future.

3.22

Discounted Cash Flow Basis

Method:

(a) Identify relevant **free cash flow** (i.e. excluding financing flows)
  (i) operating flows
  (ii) revenue from sale of assets
  (iii) tax
  (iv) synergies arising from any merger.

(b) Select a suitable time horizon.

(c) Calculate the PV over this horizon. This gives the value to all providers of finance, i.e. equity + debt.

(d) Deduct the value of debt to leave the value of equity.

3.23

Example 7

The following information has been taken from the income statement and statement of financial position of A Co:

Revenue	$350m
Production expenses	$210m
Administrative expenses	$24m
Tax allowable depreciation	$31m
Capital investment in year	$48m
Corporate debt	$14m trading at 130%

Corporate tax is 30%
The WACC is 16.6%. Inflation is 6%.

These cash flows are expected to continue every year for the foreseeable future.

Required:

Calculate the value of equity.

Solution:

Operating profits = $(350m – 210m – 24m) = $116m
Tax on operating profits = $116m x 30% = $34.8m
Allowable depreciation = $31m (assumed not included in production or administration expenses)
Tax relief on depreciation = $31m x 30% = $9.3m
Therefore net cash flow = 116m – 34.8m + 9.3m – 48m = $42.5m
The real discount rate is: 1.166 / 1.06 = 10%
The corporate value is = $42.5m / 10% = $425m
Equity = $425m – $(14m x 1.3) = $406.8m

Note: because the cash flow is a perpetuity we have used the real cash flow and the real discount rate.

3.24 Advantages and weaknesses

Advantages	Weaknesses
● Theoretically the best method ● Can be used to value part of a company	● It relies on estimates of both cash flows and discount rates – may be unavailable ● Difficulty in choosing a time horizon ● Difficulty in valuing a company's worth beyond this period ● Assumes that the discount rate, tax and inflation rates are constant through the period

4. Valuation of Debt and Preference Shares

4.1 In Chapter 13, we looked at how to calculate the cost of debt and other financial assets. The same formulae can be re-arranged so that we can calculate their value.

4.2

Formulae

The formulae for the various types of finance are as follows:

Type of finance	Market value
Irredeemable debt without tax	$P_0 = \frac{i}{K_d}$
Irredeemable debt with tax	$P_0 = \frac{i \times (1-T)}{K_d}$
Redeemable debt	MV = PV of future interest and redemption receipts, discounted at investors' required returns
Preference shares	$P_0 = \frac{D}{K_p}$

Where:

P_0 = ex-div market value of the debt or share

i = annual interest starting in one year's time

K_d = company's cost of debt, expressed as a decimal

K_p = cost of the preference shares

4.3

Example 8 – Irredeemable debt

A company has issued irredeemable loan notes with a coupon rate of 7%. If the required return of investors is 4%, what is the current market value of the debt?

Solution:

Market value = $\frac{7}{4\%} = \$175$

4.4

Example 9 – Preference shares

A firm has in issue \$100, 12% preference shares. Currently the required return of preference shareholders is 14%.

What is the value of a preference share?

Solution:

Market value of preference share:

$P_0 = \frac{D}{K_p} = \frac{\$12}{14\%} = \$85.71$

4.4

Example 10 – Redeemable debt

A company has issued some 9% debentures, which are now redeemable at par in three years time. Investors now require a redemption yield of 10%. What will be the current market value of each \$100 of debenture?

Solution:

Year		Cash flow (\$)	DF at 10%	PV (\$)
1	Interest	9	0.909	8.18
2	Interest	9	0.826	7.43
3	Interest	9	0.751	6.76
3	Redemption value	100	0.751	75.10
				97.47

Each \$100 of debenture will have a market value of \$97.47.

4.5

Example 11 – Convertible debt

A company has in issue convertible loan notes with a coupon rate of 12%. Each $100 loan note may be converted into 20 ordinary shares at any time until the date of expiry and any remaining loan notes will be redeemed at $100.

The loan notes have five years left to run. Investors would normally require a rate of return of 8% pa on a five-year debt security.

Should investors convert if the current share price is:

(a) $4.00.
(b) $5.00.
(c) $6.00.

Solution:

Value as debt

If the security is not converted it will have the following value to the investor:

	DF @ 8%	PV ($)
Interest $12 per year for 5 years	3.993	47.916
Redemption $100 in 5-years	0.681	68.100
		116.016

Value as equity

Market price	**Value as equity ($)**
4.00	$80 (i.e. 20 x $4)
5.00	$100 (20 x $5)
6.00	$120 (20 x $6)

If the market price of equity rises to $6.00 the security should be converted, otherwise it is worth more as debt. The breakeven conversion price is $5.80 per share ($116/20 shares).

The value of the convertible will therefore be $116, unless the share price rises above $5.80 at which point it will be the value of the equity received on conversion.

Examination Style Questions

Question 1

(a) Phobis Co is considering a bid for Danoca Co. Both companies are stock-market listed and are in the same business sector. Financial information on Danoca Co, which is shortly to pay its annual dividend, is as follows:

Number of ordinary shares	5 million
Ordinary share price (ex div basis)	$3.30
Earnings per share	40.0c
Proposed payout ratio	60%
Dividend per share one year ago	23.3c
Dividend per share two years ago	22.0c
Equity beta	1.4

Other relevant financial information	
Average sector price/earnings ratio	10
Risk-free rate of return	4.6%
Return on the market	10.6%

Required:

Calculate the value of Danoca Co using the following methods:

(i) price/earnings ratio method;

(ii) dividend growth model;

And discuss the significance, to Phobis Co, of the values you have calculated, in comparison to the current market value of Danoca Co. (11 marks)

(b) Phobis Co has in issue 9% bonds which are redeemable at their par value of $100 in five years' time. Alternatively, each bond may be converted on that date into 20 ordinary shares of the company. The current ordinary share price of Phobis Co is $4·45 and this is expected to grow at a rate of 6·5% per year for the foreseeable future. Phobis Co has a cost of debt of 7% per year.

Required:

Calculate the following current values for each $100 convertible bond:

(i) market value;

(ii) floor value;
(iii) conversion premium (6 marks)

(c) Distinguish between weak form, semi-strong form and strong form stock market efficiency, and discuss the significance to a listed company if the stock market on which its shares are traded is shown to be semi-strong form efficient.
(8 marks)
(Total 25 marks)
(ACCA F9 Financial Management December 2007 Q1)

Question 2

THP Co is planning to buy CRX Co, a company in the same business sector, and is considering paying cash for the shares of the company. The cash would be raised by THP Co through a 1 for 3 rights issue at a 20% discount to its current share price.

The purchase price of the 1 million issued shares of CRX Co would be equal to the rights issue funds raised, less issue costs of $320,000. Earnings per share of CRX Co at the time of acquisition would be 44·8c per share. As a result of acquiring CRX Co, THP Co expects to gain annual after-tax savings of $96,000.

THP Co maintains a payout ratio of 50% and earnings per share are currently 64c per share. Dividend growth of 5% per year is expected for the foreseeable future and the company has a cost of equity of 12% per year.

Information from THP Co's statement of financial position:

Equity and liabilities	**$000**
Shares ($1 par value)	3,000
Reserves	4,300
	7,300
Non-current liabilities	
8% loan notes	5,000
Current liabilities	2,200
Total equity and liabilities	14,500

Required:

(a) Calculate the current ex dividend share price of THP Co and the current market capitalization of THP Co using the dividend growth model. (4 marks)

(b) Assuming the rights issue takes place and ignoring the proposed use of the funds raised, calculate:
   (i) the rights issue price per share;
   (ii) the cash raised;
   (iii) the theoretical ex rights price per share; and
   (iv) the market capitalization of THP Co. (5 marks)

(c) Using the price/earnings ratio method, calculate the share price and market capitalisation of CRX Co before the acquisition. (3 marks)

(d) Assuming a semi-strong form efficient capital market, calculate and comment on the post acquisition market capitalisation of THP Co in the following circumstances:
   (i) THP Co does not announce the expected annual after-tax savings; and
   (ii) the expected after-tax savings are made public. (5 marks)

(e) Discuss the factors that THP Co should consider, in its circumstances, in choosing between equity finance and debt finance as a source of finance from which to make a cash offer for CRX Co. (8 marks)

(Total 25 marks)

(ACCA F9 Financial Management June 2008 Q2)

Question 3

Dartig Co is a stock-market listed company that manufactures consumer products and it is planning to expand its existing business. The investment cost of $5 million will be met by a 1 for 4 rights issue. The current share price of Dartig Co is $2·50 per share and the rights issue price will be at a 20% discount to this. The finance director of Dartig Co expects that the expansion of existing business will allow the average growth rate of earnings per share over the last four years to be maintained into the foreseeable future.

The earnings per share and dividends paid by Dartig over the last four years are as follows:

	2003	2004	2005	2006	2007
Earnings per share (cents)	27·7	29·0	29·0	30·2	32·4
Dividend per share (cents)	12·8	13·5	13·5	14·5	15·0

Dartig Co has a cost of equity of 10%. The price/earnings ratio of Dartig Co has been approximately constant in recent years. Ignore issue costs.

Required:

(a) Calculate the theoretical ex rights price per share prior to investing in the proposed business expansion. (3 marks)

(b) Calculate the expected share price following the proposed business expansion using the price/earnings ratio method. (3 marks)

(c) Discuss whether the proposed business expansion is an acceptable use of the finance raised by the rights issue, and evaluate the expected effect on the wealth of the shareholders of Dartig Co. (5 marks)

(d) Using the information provided, calculate the ex div share price predicted by the dividend growth model and discuss briefly why this share price differs from the current market price of Dartig Co. (6 marks)

(e) At a recent board meeting of Dartig Co, a non-executive director suggested that the company's remuneration committee should consider scrapping the company's current share option scheme, since executive directors could be rewarded by the scheme even when they did not perform well. A second non-executive director disagreed, saying the problem was that even when directors acted in ways which decreased the agency problem, they might not be rewarded by the share option scheme if the stock market were in decline.

Required:

Explain the nature of the agency problem and discuss the use of share option schemes as a way of reducing the agency problem in a stock-market listed company such as Dartig Co. (8 marks)

(Total 25 marks)

(ACCA F9 Financial Management December 2008 Q1)

Question 4

KFP Co, a company listed on a major stock market, is looking at its cost of capital as it prepares to make a bid to buy a rival unlisted company, NGN. Both companies are in the same business sector. Financial information on KFP Co and NGN is as follows:

	KFP Co		NGN	
	$m	$m	$m	$m
Non-current assets		36		25
Current assets	7		7	
Current liabilities	3		4	
Net current assets		4		3
Total assets less current liabilities		40		28
Ordinary shares, par value 50c	15		5	
Retained earnings	10		3	
Total equity		25		8
7% bonds, redeemable at par in seven years' time		15		
9% bonds, redeemable at par in two years' time				20
Total equity and non-current liabilities		40		28

Other relevant financial information:

Risk-free rate of return	4·0%
Average return on the market	10·5%
Taxation rate	30%

NGN has a cost of equity of 12% per year and has maintained a dividend payout ratio of 45% for several years. The current earnings per share of the company is 80c per share and its earnings have grown at an average rate of 4·5% per year in recent years.

The ex div share price of KFP Co is $4·20 per share and it has an equity beta of 1·2. The 7% bonds of the company are trading on an ex interest basis at $94·74 per $100 bond. The price/earnings ratio of KFP Co is eight times.

The directors of KFP Co believe a cash offer for the shares of NGN would have the best chance of success. It has been suggested that a cash offer could be financed by debt.

Required:

(a) Calculate the weighted average cost of capital of KFP Co on a market value weighted basis. (10 marks)

(b) Calculate the total value of the target company, NGN, using the following valuation methods:
   (i) Price/earnings ratio method, using the price/earnings ratio of KFP Co; and
   (ii) Dividend growth model. (6 marks)

(c) Discuss the relationship between capital structure and weighted average cost of capital, and comment on the suggestion that debt could be used to finance a cash offer for NGN. (9 marks)

(Total 25 marks)

(ACCA F9 Financial Management June 2009 Q1)

Question 5

A shareholder of QSX Co is concerned about the recent performance of the company and has collected the following financial information.

Year to 31 May	2009	2008	2007
Turnover	$6·8m	$6·8m	$6·6m
Earnings per share	58·9c	64·2c	61·7c
Dividend per share	40·0c	38·5c	37·0c
Closing ex dividend share price	$6·48	$8·35	$7·40
Return on equity predicted by CAPM	8%	12%	

One of the items discussed at a recent board meeting of QSX Co was the dividend payment for 2010. The finance director proposed that, in order to conserve cash within the company, no dividend would be paid in 2010, 2011 and 2012. It was expected that improved economic conditions at the end of this three-year period would make it possible to pay a dividend of 70c per share in 2013. The finance director expects that an annual dividend increase of 3% per year in subsequent years could be maintained.

The current cost of equity of QSX Co is 10% per year.

Assume that dividends are paid at the end of each year.

Required:

(a) Calculate the dividend yield, capital gain and total shareholder return for 2008 and 2009, and briefly discuss your findings with respect to:
   (i) the returns predicted by the capital asset pricing model (CAPM);
   (ii) the other financial information provided.

(10 marks)

(b) Calculate and comment on the share price of QSX Co using the dividend growth model in the following circumstances:

(i) based on the historical information provided;

(ii) if the proposed change in dividend policy is implemented.

(7 marks)

(c) Discuss the relationship between investment decisions, dividend decisions and financing decisions in the context of financial management, illustrating your discussion with examples where appropriate. (8 marks)

(Total 25 marks)

(ACCA F9 Financial Management June 2010 Q4)

Question 6

The board of directors of Predator Co, a listed company, is considering making an offer to purchase Target Co, a private limited company in the same industry. If Target Co is purchased it is proposed to continue operating the company as a going concern in the same line of business.

Summarised details from the most recent set of financial statements for Predator and Target are shown below:

	Predator Balance sheet as at 31 March		**Target Balance sheet as at 31 March**	
	$m	**$m**	**$'000**	**$'000**
Freehold property		33		460
Plant & equipment		58		1,310
Inventory	29		330	
Receivables	24		290	
Cash	3		20	
less current liabilities	(31)	25	(518)	122
		116		1,892
Financed by:				
Ordinary shares		35		160
Reserves		43		964
Shareholders' funds		78		1,124
Medium-term bank loans		38		768
		116		**1,892**

Predator Co 50 cents ordinary shares, Target Co, 25 cents ordinary shares.

	Predator Co		Target Co	
Year	PAT	Dividend	PAT	Dividend
	$m	$m	$'000	$'000
T5	14.30	9.01	143	85.0
T4	15.56	9.80	162	93.5
T3	16.93	10.67	151	93.5
T2	18.42	11.60	175	102.8
T1	20.04	12.62	183	113.1

T5 is five years ago and T1 is the most recent year.

Target's shares are owned by a small number of private individuals. Its managing director who receives an annual salary of $120,000 dominates the company. This is $40,000 more than the average salary received by managing directors of similar companies. The managing director would be replaced, if Predator purchases Target.

The freehold property has not been revalued for several years and is believed to have a market value of $800,000.

The balance sheet value of plant and equipment is thought to reflect its replacement cost fairly, but its value if sold is not likely to exceed $800,000. Approximately $55,000 of inventory is obsolete and could only be sold as scrap for $5,000.

The ordinary shares of Predator are currently trading at 430 cents ex-div. A suitable cost of equity for Target has been estimated at 15%.

Both companies are subject to corporation tax at 33%.

Required:

Estimate the value of Target Co using the different methods of valuation and advise the board of Predator as to how much it should offer for Target's shares.

Question 7

The directors of Carmen, a large conglomerate, are considering the acquisition of the entire share capital of Manon, which manufactures a range of engineering machinery. Neither company has any long-term debt capital. The directors of Carmen believe that

if Manon is taken over, the business risk of Carment will not be affected.

The accounting reference date of Manon is 31 July. Its balance sheet as on 31 July 2004 is expected to be as follows.

	$	$
Non-current assets (net of depreciation)		651,600
Current assets		
Inventory and WIP	515,900	
Receivables	745,000	
Bank balances	158,100	1,419,000
		2,070,600
Capital and reserves		
Issued ordinary shares of $1 each		50,000
Distributable reserves		404,100
		454,100
Current liabilities		
Payables	753,600	
Bank overdraft	862,900	1,616,500
		2,070,600

Manon's summarized financial record for the five years to 31 July 2004 is as follows.

Year ended 31 July	2000	2001	2002	2003	2004 (estimated)
	$	$	$	$	$
Profit before non recurring items	30,400	69,000	49,400	48,200	53,200
Non recurring items	2,900	(2,200)	(6,100)	(9,800)	(1,000)
Profit after non recurring items	33,300	66,800	43,300	38,400	52,200
Less dividends	20,500	22,600	25,000	25,000	25,000
Added to reserves	12,800	44,200	18,300	13,400	27,200

The following additional information is available.

1. There have been no changes in the issued share capital of Manon during the past five years.
2. The estimated values of Manon's non-current assets and inventory and work in progress as on 31 July 2004 are as follows.

	Replacement cost	Realisable value

	$	$
Non-current assets	725,000	450,000
Inventory and work in progress	550,000	570,000

3. It is expected that 2% of Manon's receivables at 31 July 2004 will be uncollectible.
4. The cost of capital of Carment plc is 9%. The directors of Manon estimate that the shareholders of Manon require a minimum return of 12% per annum from their investment in the company.
5. The current P/E ratio of Carmen is 12. Quoted companies with business activities and profitability similar to those of Manon have P/E ratios of approximately 10, although these companies tend to be much larger than Manon.

Required:

(a) Estimate the value of the total equity of Manon as on 31 July 2004 using each of the following bases:
   (i) Balance sheet value;
   (ii) Replacement cost of the assets;
   (iii) Realisable value of the assets;
   (iv) The dividend valuation model;
   (v) The P/E ratio model.

(13 marks)

(b) Explain the role and limitations of each of the above five valuation bases in the process by which a price might be agreed for the purchase by Carment of the total equity capital of Manon. (6 marks)

(c) State and justify the approximate range within which the purchase price is likely to be agreed. (6 marks)

(25 marks)