VALUATIONS

DISCLAIMER:

Students generally battle with this topic, which comprises a third of the syllabus.

These notes were written in laymen's terms as response to numerous enquiries, in person, telephonically and by e-mail, most of them just before exams. It's necessary to mention this fact because mistakes with regard to context, comprehensiveness and technicality are easily made when one has many interruptions during the writing process.

A number of students indicated that they do find the notes useful and would rather make do with them than without them. Bear in mind that the notes are not intended to be either comprehensive or replacing study content in any manner. Also know that the prescribed textbook overrules contradictive notes, should there be any.

INTRODUCTION

Anybody wanting to make or sell an investment, or having to give advice about investments, has to determine the relative value of a particular investment. This value will be used as basis for negotiating a deal, either as buyer or seller. It is also necessary to place a value on one's personal investments to make a conclusion about one's own wealth and future needs. Financial institutions need to know the value of real assets and financial assets and liabilities.

The textbook provides more reasons on pages 174 - 176, but for purposes of this discussion, the aforementioned should suffice to emphasize the importance of valuations as topic.

RISK

We shall start our discussion by first discussing the relevance of risk, the reason being that risk plays an enormous part in determining value. Generally a high risk investment results in either a huge return or a huge loss. Similarly, a medium risk investment normally would render a medium return or a medium ("reasonably affordable") loss. A low risk investment would render a low rate of return, with a minimal probability to suffer a loss.

Examples of risk:

High risk:	Investment in an exclusive shoe shop with high overheads and little equity finance.
Medium risk:	Investment in a hardware shop with a fair amount of overheads and 40% equity finance.
Low risk:	A fixed deposit with a bank.

Risk is quantified as a **fair rate of return** or, alternatively, a **fair yield**. Both the fair rate of return and a fair yield are expressed as percentages. Risk cannot be calculated "accurately" since it's, by its very nature, subjective. It's decided upon according to the beliefs and estimations of the person doing the valuation. There are, however, guidelines.

A risk free rate would normally be the rate of interest on government bonds. This would, consequently, be the starting point in determining a fair rate of return for a specific investment.

Factors which increase or decrease risk have then to be taken into account. Some of these factors may be:

- the general economic climate at the time
- the economic climate for a specific industry, for example, the construction industry
- economic forecasts
- index prices on stock exchanges
- exchange rates and trends

The textbook lists an extensive number of specific risk factors on page 184, grouped as security risks, business risks and company risks.

Factors which increase risk will be added to the risk free rate, and, likewise, factors decreasing risk will be deducted.

The following **models** could, inter alia, be used **to propose a fair rate of return** for a particular investment:

- The risk premium approach (pages 185 – 186 of the textbook)
- Gordon's growth model (pages 186 - 187 of the textbook)
- The capital asset pricing model (CAPM) (pages 187 – 188 of the textbook)
- Weighted average cost of capital (WACC) (pages 189 – 190 of the textbook)

FOR PURPOSES OF THE EXAM, RISK COULD BE EXAMINED AS FOLLOWS:

1. **The risk rate could be given** in the information – no calculations would be involved.

2. **The risk premium approach** (pages 185 – 186 of the textbook).

   You only need to be able to indicate whether a particular factor increases or decreases risk. You won't be required to determine an exact rate.

3. **Gordon's growth model** (pages 186 - 187 of the textbook)

   In circumstances where an enterprise foresees future growth, the projected growth rate must be deducted from the fair rate of return, to determine the risk rate to use in the valuation. This results in the formula in 8.3.2 at the bottom of page 186 of the textbook.

   In the exam the growth rate may be given straightaway, or it may need to be determined.

   If it needs to be determined, you would typically be given the historic profit of an enterprise, from which a growth pattern has to be discerned. In order to do so, however, certain adjustments to historic profit may be required to obtain an undistorted view thereof. These adjustments involve charging fair expenses and reflecting fair incomes (excessive amounts must be adjusted to reflect fair values), and eliminating the effect of unusual and/or non-recurring expenses and/or income. Read about it on page 196 of the textbook. It will also be discussed in more detail later in this document.

4. **The capital asset pricing model (CAPM)** (pages 187 – 188 of the textbook)

   Note that this model can only be used to determine a fair rate of return for **listed companies**.

   Any question requiring you to apply this method, will provide all the relevant values. It would be a matter of substitution and calculation, should you get a question on this. Remember that formulae are not given in the exam.

5. **Weighted average cost of capital (WACC)** (pages 189 – 190 of the textbook)

   This method enables one to determine the weighted average **cost of all forms of finance**, **including the cost of equity capital**, of an entity. The mechanics to calculate this cost is explained in paragraph 8.3.4 on page 189 of the textbook.

   Work carefully through the example on page 190 to grasp the mechanics of how to determine the weighted average cost of capital.

VALUATIONS

In principle you must be able to value:

1. Trade activities
2. Real estate
3. A business as a whole
4. A company as a whole
5. A minority share in ordinary shares
6. A majority share in ordinary shares
7. Sundry financial instruments, for example:

   - Redeemable preference shares or debentures
   - Convertible preference shares or debentures
   - Capitalized ordinary shares

1. VALUATION OF TRADE ACTIVITIES

Owing to the difficulty of predicting future cash flows, **trade activities** are **often valued** by using the **earnings yield method,** also known as **the capitalization of earnings model**. This entails capitalizing projected future earnings at a fair earnings yield.

Take, for example, a grocery shop situated in a suburb. Assume that a net profit of R10 million after tax could be sustained indefinitely. Also assume a fair earnings yield of 20%.

In terms of the earnings yield method the value of the shop would be determined by capitalizing R10 million at 20%, namely R50 million.

Practically, it means that if you pay R50 million for the shop, you will receive 20% on your investment (R10 million), which is in accordance with your estimate of risk.

Owing to the fact that the earnings yield method requires a value for earnings, a fair earnings yield and, in most cases, an estimate of growth, determining these values should be done cautiously.

The determination of a fair rate of return has been discussed, which leaves us with a discussion of earnings and growth, although growth has to a certain extent been discussed in Gordon's growth model.

EARNINGS

1.1 FINANCE COST/INTEREST NEEDS TO BE DISREGARDED

The issue would be best explained by relating to a situation in terms of which an office complex is for sale. The selling price of the property is, say, R20 million. There are two willing buyers at that price: one will pay in cash, and the other by means of a bond. The question is: What is the value of the complex?

Assuming that both buyers are prepared to do a deal at R20 million, and also assuming that there are no other buyers, the office complex is worth R20 million, regardless of how the buyer will be financing the R20 million.

1.2 EARNINGS SHOULD REFLECT FAIR/REALISTIC INCOME(S) AND EXPENSES

When one buys a business, one is, in fact, in most cases buying a fair/realistic profit. It is irrelevant how a current owner(s)/director(s) under- or overcharge expenses. The same goes for income.

Generally, when a question presents a profit history, one would have to adjust historic profit to reflect fair expenses and incomes - excessive amounts must be adjusted to reflect fair values. Once-off occurrences which had a bearing on historic profit also need to be eliminated.

A tip: don't make the mistake of blindly deducting or adding to historic profit to obtain the value for earnings to use in the valuation:

If an **expense is overcharged** in historic profit, **profit** will for purposes of the valuation **be increased**. If an **expense is undercharged**, **profit** will for purposes of the valuation **be decreased**.

If **income** is **excessive**, **profit** for purposes of the valuation will **be decreased**. If **income** is **understated**, **profit** will **be increased**.

Once-off occurrences may be either an income or an expense. **Income will have to be deducted** from historic profit, and **expenses be added**.

Examples of once-off occurrences include the profit on the sale of an asset and the receipt of money in terms of an insurance claim.

1.3 DISCERNING A PROFIT TREND/GROWTH

When a decision has to be made about the earnings figure to use in a valuation (in other words, the question doesn't state the amount of earnings which should be used), there are generally three scenarios:

1.3.1 Profit has a constant upward trend

A growth factor should be established. **Earnings must not be adjusted; the growth rate will be used to reduce the fair rate of return** according to Gordon's growth model.

The earnings to be used in the valuation should be the **projected earnings for the following financial year**, which means that the **earnings of the current financial year** will be **adjusted by the growth rate once**.

1.3.2 Profit varies – no trend can be distinguished

Use average earnings by adding the earnings of all years given, and divide it by the number of years given.

OR

Use the weighted average earnings.

Normally, the most recent year would carry the largest weight – if the profit history of three years is given, for example, the weighted average earnings could be determined by multiplying the most recent year's earnings by 3, the year before that by 2, and the year before year 2 by 1. These amounts should then be added, and then divided by 6 (the sum of the weights).

1.3.3 Profit has a constant downward trend

The business would probably be liquidated unless information to the contrary is available. If the latter is the case, calculations will be made according to the information available. If the company is to be liquidated, an estimate of future earnings would not be necessary.

This part of the discussion deals with the determination of earnings to use in a valuation method. It would, perhaps, at this point be sensible to make a mental note that the liquidation method would probably apply if there is no chance of rescuing the entity. Assets would most likely be devalued to reflect liquidation values, which are generally significantly lower than ordinary carrying values.

1.4 THE ACTUAL VALUATION OF TRADE ACTIVITIES

The fair earnings yield method (also known as the capitalization of earnings method) would normally be used to place a value on trade activities. Assets used to conduct these trade activities wouldn't be taken into account.

2. VALUATION OF REAL ESTATE

The value of real estate could be based on transactions of similar real estate, or according to appropriate indexes, or by using a suitable qualified person to do the valuation, or whatever means seems suitable. In these cases, you don't have to determine values all by yourself.

It would be appropriate to use the fair earnings yield method to value property which is invested in for purposes of letting it. In such a case you would generally use the earnings yield method, where **earnings would comprise the net rent receivable per annum**. Once again, the net rent receivable should reflect fair values for income as well as for expenses.

3. VALUATION OF A BUSINESS AS A WHOLE

Entities could have more than one business at a time.

Within context, the value of "a business as a whole" could relate to a specific set of activities conducted by an entity. If an entity trades, for example, the trading activities as such would represent "a business" which could be sold. In a case like that, if the entity is, say, a private company, the trade activities could be sold, without the shares of the company being sold. After the transaction has been concluded, the company would still have its share capital, but instead of conducting business, it would have the proceeds of the sales transaction. These proceeds could include cash in the bank account. Shareholders could then maybe choose to liquidate the company, in which case the available cash, after liquidation costs, would be distributed between the shareholders. The company could, however, also choose to embark on a new business, using the capital at its disposal.

Remember, the **manner in which an entity is financed to carry out a set of activities needs to be disregarded when** the business activities are valued.

The value of a business with a **combination of trade activities and investments** could be determined by **adding the value** placed on its **trading activities** in terms of the earnings yield method, **and the market values of its investments, net of liabilities relating to these investments.**

The **super profits method** could be used to determine the value of goodwill attached to a business.

To illustrate the application of the super profits method, let's take the example of a family grocery shop in a suburb. An owner may manage a shop extremely well and attract many more customers than the average number for a similar shop. Would he sell his shop, he would sell profit relating to shopping by existing customers. The new owner would pay a premium, known as "super profits", for the profit that he expects to make on sales to the "extra customers" (profit relating to the difference in sales between existing customers and the "average, fair" number of customers of similar shops). Super profits would be earned for a limited period only. If the good management is not maintained, customers will start shopping elsewhere. Similarly, the new owner could not be expected to pay for customers he would manage to keep because of his own business skills.

Once the value of goodwill has been established, it would be treated as a separate asset. It would be added to the value of the trading activities of a business, or to the value of a business in terms of the intrinsic value method.

4. THE VALUATION OF COMPANIES

A company is a legal entity which, at date of its incorporation, is financed by means of the issue of ordinary shares. When a company, or part thereof, is sold, its ordinary shares, or part thereof, are sold. The only way in which anyone can invest in a company, is to invest in its finance, which may consist of shares and debentures.

A statement of financial position should be viewed as consisting of assets on the one side, financed by different sources of capital on the other side.

In principle, the total value of ordinary shares would always be the value of the business as a whole, less the fair values of external interest-bearing debt, less the fair value of debentures, if applicable, less the fair value of preference share capital, if applicable.

Ideally, if sufficient information is available, the value of a company as a whole should be equal to the present value of its expected future free cash flows, before any finance costs, discounted at the weighted average cost of capital (WACC).

The determination of the fair values for preference share capital, debentures, etc. will be addressed later in this document.

Free cash flow, for purposes of **valuing ordinary shares directly**, may comprise of profit after tax (and, by implication, after interest), plus non-cash expenditure, less preference dividends, less extra capital required. This value would then be **discounted by the fair rate of return for similar ordinary shares**.

Remember that, when you **value ordinary shares**, a **fair rate of return for similar ordinary shares** would be used, rather than a fair rate of return on similar businesses.

Businesses that don't trade, which are **asset-driven** with balance sheets comprising a number of investments only, do exist. The **intrinsic value method** would generally be considered appropriate under such circumstances. In terms of this method the value of the business would be the going concern value of its assets, less the fair value of its liabilities.

In a profitable company, money which is not utilized to conduct normal business activities, or hasn't been declared as a dividend, or not taken out of the business by its owner, would be invested.

Investments may include, besides others, real estate, fixed deposits at a financial institution, shares in listed and/or unlisted companies, etc.

In order to **identify investments**, the balance sheet and other information needs to be scrutinized to identify those assets which are not utilized by the enterprise for purposes of conducting its normal business activities. These assets have to be **re-valued individually**. Care must be exercised to ensure that each investment **reflects its fair market value**.

If an investment is made in an office complex which with the purpose to let the building, that would represent a secondary set of activities which should be valued in its own right. Again, note that it would be possible for a company to sell either or both the trading activities and the building.

The value of a **business heading for liquidation** would be determined according to the **liquidation value method,** in terms of which the total value would be the net realizable values of its assets, less liabilities and liquidation costs.

The valuation method to use in a long question in the examination would normally be given.

5. VALUATION OF A MINORITY INTEREST IN ORDINARY SHARES

Dividends relate to the portion of earnings paid to shareholders in cash. Investors are buying future dividends. **Dividends** are **often indicated** by referring to a **pay-out ratio**.

A fair dividend yield would reflect the risk for a minority interest in ordinary shares. Risk is discussed at the beginning of this document. Take note that you may need to apply one of the models to quantify it in the examination.

One approach to value a minority interest would be to discount the fair sustainable future dividend at a fair dividend yield.

If growth is applicable, the expected growth rate should be deducted from the fair rate of return according to Gordon's growth model.

REMEMBER TO ADJUST EARNINGS, if necessary, as discussed in point 1 of this document.

The price-earnings ratio (PE ratio) is often used to estimate the value of listed shares.

It's calculated by dividing the trading price of a share by the reported earnings per share.

PE ratio = trading price per share ÷ earnings per share

The earnings per share would be total earnings, divided by the total number of ordinary shares in issue.

You should become comfortable at playing with the formula. It involves three values: the PE ratio, the trading price per share, and the earnings per share.

Let's look at an example where all the variables are known:

A certain share trades at R50 and the earnings per share amounts to R10:

PE ratio = trading price per share ÷ earnings per share
= R50 ÷ 10
= 5

Trading price per share = earnings per share X PE ratio
= R10 X 5
= R50

Earnings per share = trading price per share ÷ PE ratio
= R50 ÷ 5
= R10

Sometimes the price-earnings ratio is used to value unlisted shares, too. Since there will be no information available (the shares are not listed and annual results, including the earnings per share, are not available), a fair price-earnings ratio would be determined by dividing earnings by the fair rate of return less the expected growth rate.

6. VALUATION OF A MAJORITY INTEREST IN ORDINARY SHARES

Ideally, if sufficient information is available, the value of a business should be its cash flow before any finance costs, discounted at the weighted average cost of capital (WACC).

The value of ordinary shares would be the value of the business as a whole, less the fair values of the other sources of finance.

Other methods may, however, be considered more appropriate under specific circumstances.

Let's assume that we're dealing with a trading company.

A **fair earnings yield** would reflect the **risk for a majority interest in ordinary shares.**

A majority interest would be valued by discounting the expected fair sustainable earnings, as adjusted, at a fair earnings yield.

The valuation will then be:

Expected earnings, divided by the fair earnings yield less expected growth rate percentage.

Sometimes the fair rate of return is not provided, in which case it should be determined according to the guidance in the discussion of risk at the beginning of this document.

REMEMBER TO ASK WHAT IS REQUIRED in the examination**: If a 60% interest has to be valued, don't forget to multiply the total value by 60%.**

Cost of control is a once-off, separate issue, when a majority interest in a company is obtained for the first time.

7. VALUATION OF SUNDRY FINANCIAL INSTRUMENTS

Sundry financial instruments like redeemable or convertible preference shares and/or debentures are **valued by determining the present value of future expected cash flows**, discounted at a fair rate of return for **similar** financial instruments.

Briefly, the following is applicable:

7.1 REDEEMABLE PREFERENCE SHARES OR DEBENTURES

Two types of cash flow are applicable:

7.1.1 An annuity portion (the preference dividend or interest which is payable or receivable per annum for a number of years)
The PV values are provided in Table B in the exam as the PV of R1 per annum for n years.

7.1.2. A Lump sum (the redeemable amount after a certain period)

The PV values are provided in Table A in the exam as the PV of R1 per annum after n years.

The preference share or debenture can be redeemable:

- At par
- At a premium
- At a discount

Please note that the premium or discount applicable to the redemption of the capital component of the share or debenture does not affect the value of the annuity component of the valuation. It simply indicates the lump sum receivable at the stage of redemption of the share or debenture.

The total value of a redeemable preference share or debenture will be the sum of the present value of interest to be received in the future and the present value of the lump sum.

Example:

Say you have a R100 debenture which bears interest at 12% per annum, which is redeemable after 5 years at:

(i) Par
(ii) A premium of 5%
(iii) A discount of 5%

Assume a fair rate of return for similar debentures of 15%.

Future cash flows are discounted at a fair rate of return:

Annuity component:

PV of (12% of R100) per annum for 5 years:	R12 X 3,352	=R40,224

Lump sum:

(i)	PV of R100 (par value) after 5 years @ 15%	
	R100 X 0,497:	=R49,700
	Total value	=R89,924
(ii)	Annuity component remains the same, namely	=R40,224
	PV of R100 X 105% X 0,497:	=R52,185
	Total value	=R92,409
(iii)	Annuity component:	=R40,224
	PV of R100 X 95% X 0,497	=R47,215
	Total value	=R87,439

7.2 CONVERTIBLE PREFERENCE SHARES OR DEBENTURES

Approach to valuation:

Value the redeemable share or debenture as if you would elect to redeem it. Then value it as if you would elect to convert it. The option which is most beneficial would be exercised, unless there are specific reasons why a particular option is preferred over the other, reasons like lack of liquid funds, etc.

A scheme will always be given in the exam. An example of one may be something like:

"Convertible shares can be converted into ordinary shares in the ratio of 3 ordinary shares for every 5 convertible shares held. Unconverted shares will be redeemed after 5 years at:

(i) par
(ii) premium of 5%
(iii) discount of 5% **"**

Value a convertible share as if you would elect to redeem it according to the explanation in 7.1 above.

Value a convertible share as if you would convert it into ordinary shares as follows:

Determine the number of ordinary shares that you are entitled to by dividing the actual number of convertible shares held by 5, and multiplying it by 3.

Value the number of ordinary shares to which you will become entitled to, bearing in mind that it would represent a minority interest in ordinary shares. The market value of ordinary shares (after the conversion) may be stated in the question, or information may be provided that you can calculate the value, otherwise it should be determined as discussed in point 3 of this document.