

Updating Your Study Manual

Instructions for Inserting Version 1.1, 2003

The followings serve as the instructions for updating **Topic 6: Securities Analysis** of Study Manual 8 for the Licensing Examination for Securities and Futures Intermediaries. Please be reminded that only the updated sections are provided for downloading. You may replace the relevant sections with this updated version for the study manual you possess.

Instructions:

1. Download and print out the following pages.
 2. **Remove** pages 6-7 to 6-8 and **Insert** new pages 6-7 to 6-8.
 3. **Remove** pages 6-15 to 6-20 and **Insert** new pages 6-15 to 6-20.
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ABC Corporation

Balance Sheet as at 30 June 2002

	2002	2001
	HKD'000	HKD'000
Current assets		
Cash	252,000	300,000
Receivables	375,000	315,000
Inventories	1,059,000	870,000
Prepayments	18,000	12,000
Total current assets	1,704,000	1,497,000
Non-current assets		
Property, plant & equipment	585,000	547,000
Intangible assets	22,500	15,000
Total non-current assets	607,500	562,000
Total assets	2,311,500	2,059,000
Current liabilities		
Payables	405,000	435,000
Borrowings	108,000	103,000
Provisions	54,000	52,000
Total current liabilities	567,000	590,000
Non-current liabilities		
Borrowings	225,000	300,000
Total liabilities	792,000	890,000
Net assets	1,519,500	1,169,000
Shareholders' equity		
Contributed equity	750,000	750,000
Reserves	294,000	214,000
Retained profits	475,500	205,000
Total equity	1,519,500	1,169,000

Other relevant information:

	2002	2001
	HKD'000	HKD'000
Sales	3,490,000	3,024,000
Cost of goods sold	2,494,000	2,275,000
Interest expense	120,000	135,000
Profit before tax	420,000	380,000
Profit after tax	294,000	266,000
Dividends	165,000	150,000

2.3.1 Liquidity ratios

Liquidity ratios measure a company's ability to meet its short-term financial obligations. Common liquidity ratios include: current ratio, quick ratio, inventory turnover and debtors turnover.

Current ratio

The current ratio shows how easy or difficult it will be for the company to repay its current liabilities.

$$\text{Current ratio} = \frac{\text{current assets}}{\text{current liabilities}}$$

For ABC Corporation:

2002

$$\begin{aligned} \text{Current ratio} &= \frac{1,704,000}{567,000} \\ &= 3.00 \text{ times} \end{aligned}$$

2001

$$\begin{aligned} \text{Current ratio} &= \frac{1,497,000}{590,000} \\ &= 2.54 \text{ times} \end{aligned}$$

When interpreting the current ratio, the rule of thumb is 2:1. In the case of ABC Corporation, the ratios for both years are well above the rule of thumb and look very healthy. The 2002 ratio is also higher than the 2001 ratio and reflects that the company's liquidity is looking very good. Caution must be taken when interpreting these results, as they may not be as good as they look. These ratios should be compared with other companies in the industry and with the industry average. For example, the industry sector in which ABC operates,

In the case of ABC Corporation in 2002, it generated an income of HKD4.87 for every HKD100 invested.

2.3.3 Solvency ratios

The solvency ratios indicate the ability of a company to meet its long-term and short-term obligations. The common solvency ratios include: debt ratio, debt-to-equity ratio and interest coverage.

Debt ratio

The debt ratio measures the percentage of assets financed by debt. Increasing debt and investing in assets can increase income and profit but it does increase the risk levels of the company. The debt ratio is a measure of that risk.

$$\text{Debt ratio} = \frac{\text{total debt}}{\text{total assets}} \times 100\%$$

For ABC Corporation:

2002

$$\begin{aligned} \text{Debt ratio} &= \frac{792,000}{2,311,500} \times 100\% \\ &= 34.26\% \end{aligned}$$

2001

$$\begin{aligned} \text{Debt ratio} &= \frac{890,000}{2,059,000} \times 100\% \\ &= 43.22\% \end{aligned}$$

The debt ratio has improved over these two years and may indicate that some debt has been paid off, or new assets or investments had been made without issuing new debts. Debt management is an important area to look at for a company.

Debt-to-equity ratio

The debt-to-equity ratio (also known as gearing ratio) measures the percentage of debt financed by equity. A company may finance the purchase of assets through issuing new shares or they may retire debt by issuing more shares. The debt-to-equity ratio is an indicator of a company's financial structure.

$$\text{Debt-to-equity ratio} = \frac{\text{total debt}}{\text{total equity}} \times 100\%$$

For ABC Corporation:

2002

$$\begin{aligned} \text{Debt-to-equity ratio} &= \frac{792,000}{1,159,500} \times 100\% \\ &= 68.31\% \end{aligned}$$

2001

$$\begin{aligned} \text{Debt-to-equity ratio} &= \frac{890,000}{1,169,500} \times 100\% \\ &= 76.13\% \end{aligned}$$

Over the two years, the debt-to-equity ratio has improved indicating that either debt may have been paid off or new equity may have been issued.

Interest coverage

Interest coverage measures a company's ability to pay interest payments.

$$\text{Interest coverage} = \frac{\text{profit before tax} + \text{interest expense}}{\text{interest expense}}$$

For ABC Corporation:

2002

$$\begin{aligned} \text{Interest coverage} &= \frac{420,000 + 120,000}{120,000} \\ &= 4.5 \text{ times} \end{aligned}$$

2001

$$\begin{aligned} \text{Interest coverage} &= \frac{380,000 + 135,000}{135,000} \\ &= 3.81 \text{ times} \end{aligned}$$

The results for the two years have improved which indicates that ABC Corporation has improved its ability to cover interest payments.

The above analysis of ABC Corporation shows that ratio analysis provides an insight into the financial performance of the company. However, it does have limitations as it relies on information contained in the annual reports (a mixture of historical data and market values). It should also be stressed that the balance sheet is a static measure at a particular point in time and is only showing the company's position for that balance day.

Quick check 2:

Below are extracts from X Limited's financial statements. Using this information answer the following questions below.

X Limited
Balance Sheet
As at 30 June 2002

	2002	2001
	HKD'000	HKD'000
Current assets		
Cash	210,000	250,000
Receivables	345,000	295,000
Inventories	1,075,000	850,000
Prepayments	12,000	6,000
Total current assets	1,642,000	1,401,000
Non-current assets		
Property, plant & equipment	595,000	510,000
Intangible assets	15,000	10,000
Total non-current assets	610,000	520,000
Total assets	2,252,000	1,921,000
Current liabilities		
Payables	385,000	405,000
Borrowings	120,000	100,000
Provisions	60,000	50,000
Total current liabilities	565,000	555,000
Non-current liabilities		
Borrowings	250,000	275,000
Total liabilities	815,000	830,000
Net assets	1,437,000	1,091,000
Shareholders' equity		
Contributed equity	700,000	700,000
Reserves	275,000	220,000
Retained profits	462,000	171,000
Total equity	1,437,000	1,091,000

Other relevant information:	2002	2001
	HKD'000	HKD'000
Sales	3,750,000	3,522,000
Cost of goods sold	2,850,000	2,475,000
Interest expense	110,000	122,000
Profit before tax	510,000	350,000
Profit after tax	310,000	289,000
Dividends	170,000	160,000

Calculate the following ratios for Company X for 2002.

- 1) Current ratio
- 2) Earnings per share
 - Shares on issue at 1 July 2001 were: 200,000,000
 - Shares on issue at 30 June 2002 were: 235,000,000
 - 35,000,000 additional shares were issued on 30 September 2001.
- 3) Price earnings ratio
 - X Limited current market price is HKD12.50.

Answers:

$$1) \text{ Current ratio} = \frac{\text{current assets}}{\text{current liabilities}}$$

2002

$$\text{Current ratio} = \frac{1,642,000}{565,000}$$

$$= 2.91 \text{ times}$$

$$2) \text{ Earnings per share} = \frac{\text{profit after tax}}{\text{weighted average number of shares issued}}$$

2002

$$\text{Earnings per share} = \frac{310,000,000}{200,000,000 + \left(35,000,000 \times \frac{9}{12} \right)}$$

$$= \$1.37$$

$$3) \text{ Price earnings ratio} = \frac{\text{market price per share}}{\text{earnings per share}}$$

2002

$$\begin{aligned} \text{Price earnings ratio} &= \frac{12.50}{1.37} \\ &= 9.12 \text{ times} \end{aligned}$$

2.4 Valuation of equity securities

In the section above, we discussed ratio analysis and its importance as a tool in understanding the financial position of a company. Ratio analysis is based on historical information. The issue is how to value shares and how to predict the future prices of shares. There are a number of methods that can be used. In this section, we briefly look at four of the most common techniques. These methods of valuation are the *dividend discount model*, *dividend growth model*, the *price/earnings model* and the *capital asset pricing model*.

2.4.1 Dividend discount model

The dividend discount model operates on the premise that the value of an equity security is equal to the present value of the anticipated future dividends.

The dividend discount formula is as follows:

$$P = \frac{D1}{(1+r)^1} + \frac{D2}{(1+r)^2} + \frac{D3}{(1+r)^3} \cdots \frac{Dn}{(1+r)^n}$$

Where:

P = price of the share

D = expected annual dividend per share

r = required rate of return on the share (discount rate)

If the same amount of dividends is expected to be distributed forever, the dividend discount formula will be simplified as followed:

$$P = \frac{D}{r}$$

For example, if Company A paid a dividend of HKD2.00 per share, in the first year and the required rate of return is 10%. What is the price of the share today?

$$\begin{aligned}
 P &= \frac{2.00}{0.10} \\
 &= \text{HKD}20.00
 \end{aligned}$$

2.4.2 Dividend growth model

The dividend growth model adds a more realistic dimension to the valuation model. This model assumes that dividends increase at a constant rate each year.

The dividend growth formula is as follows:

$$P = \frac{D(1+g)}{r-g}$$

Where:

- P = price of the share
- D = annual dividend for this year
- r_i = required rate of return on the share (discount rate)
- g = dividend growth rate.

Using the same example above, Company A has a dividend of HKD2.00 this year with an expected growth rate of 9% per year. If the required rate of return on the share is 10%, what is the price of the share?

$$\begin{aligned}
 P &= \frac{2.00 \times (1 + 9\%)}{(10\% - 9\%)} \\
 &= \text{HKD}218
 \end{aligned}$$

2.4.3 Price earnings model

In the previous section, we calculated the price earnings or P/E ratio. In the price earnings model, the P/E ratio is used to indicate the value of a share. By comparing the P/E ratio of similar companies in an industry or sector, it provides an indication of the relative value of individual companies.

For example, a company with a high P/E ratio when compared to other companies in the same industry indicates that the company has higher expected growth and vice versa for a low P/E. Alternatively, the company may have been overvalued or the other companies in the industry are still undervalued.

The price earnings model is a very simple model to use but its limitations are that it relies on accounting data that can be affected by historical costs and accounting standards.