**Lecture 4 notes – Interpretation of financial ratios.**

**Analysing financial performance & position of a business**

We can use ratios and trends to analyse the financial performance and position of a business.

To analyse financial performance and position we compare accounting information this year with accounting information generated in prior years or we compare accounting information in one company with accounting information in another company/competitor within the same industry

**INCOME STATEMENT**

Sales revenue/Turnover XX

Cost of sales (XX)

Gross Profit. XX

Admin, selling & distribution. (xx) (Operating expenses)

Operating profit/PBIT/EBIT XX

Financial expenses (XX) (Interest on borrowings).

PBT/EBT. XX

TAXATION/CT. (XX)

PAT / EAT XX (Shareholders’ profits)

DIVIDENDS. (XX)

RETAINED PROFIT XX

**SOFP**

Non-current assets £50M. XX (Productive assets)

Current assets £20M XX (Non-productive assets)

Total assets. £75M XX

Shareholders’ funds. £45M XX (Share capital & reserves / Equity)

Non-current liabilities £20M XX (long term borrowing)

Current liabilities. £10M XX

Shareholders’ funds &

Liabilities £75 XX

To analyse and explain HOW / WHY the changes in an entity’s financial performance may have happened:

1. Calculate ratios and trends e.g. profit margin or growth in sales revenue
2. Use information in the reports and accounts or wider information available on the entity.

**Categories of ratios**

* Profitability ratios
* Liquidity ratios
* Working capital / efficiency ratios
* Gearing / capital structure ratios
* Stock market / Investors’ ratios

**PROFITABILITY RATIOS**

The following are the most common ratios used to assess profitability.

|  |  |  |
| --- | --- | --- |
| Name of Ratio | Formula | State result as |
| 1. Gross Profit margin | Gross profit/Sales revenue  page25image45234048 | % |
| 2. Operating profit margin | Operating profit /Sales revenue  page25image45234240 | % |
| 3. Net profit margin | Profit after tax/Sales revenue  page25image45234432 | % |
| 4. Return on Capital Employed /ROCE | Operating profit / Equity & Non-current liabilities  page25image45234624 | % |
| 5. Return on Equity/ROE | Profit after tax /Equity | % |

**Why do profitability ratios change?**

Profit margin increase – possible reasons?

* Increase in selling price but costs/expenses stay the same
* Change in mix of products – selling more products with higher margins and fewer products with lower margins
* Reduction in costs/expenses

ROCE increase – possible reasons?

* Higher profit generated but capital employed stays the same
* No change in profit but reduction in capital employed (e.g. not raising new finance but repaying some debt capital)

ROE increase – possible reasons?

* Raising debt finance and investing in projects which generate a high return. Debt is both lower risks/costs and in addition tax efficient compared to equity finance.
* Profit increase but no change in equity finance
* No change in profit but reduction in equity finance e.g. share buyback

**LIQUIDITY RATIOS (and WORKING CAPITAL): Liquidity is essential for a company’s survival.**

Working capital is the money needed by a business to fund its day to day operations. Without working capital, a company cannot continue to trade. It is the difference between current assets and current liabilities. This is sometimes called ‘net current assets’

The main components of working capital are:

* Inventory
* Receivables
* Bank and cash balances
* Payables
* Bank overdraft

What are the aims of working capital management?

Liquidity – how much cash & near cash do we need to avoid running out!  
In general a higher level of working capital is better for liquidity. More current assets and fewer current liabilities means that a business is less likely to run out of cash.

Profitability – working capital levels can have an impact on profitability. In general, a lower level of working capital is better for profitability. The main reason is that investment in working capital is not productive and needs to be financed e.g. bank overdraft and therefore interest will need to be paid.

Liquid assets

These will vary from industry to industry, but normally would include cash/bank balances and receivables. Inventories are excluded from liquid assets as they are not readily convertible into cash. Therefore, either of two ratios are used to assess a company’s liquidity:

• The Current ratio = Current Assets /Current Liabilities

• The Acid Test or Quick Ratio

= Current Assets less inventory/Current Liabilities

**WORKING CAPITAL/EFFICIENCY RATIOS**

To assess this, the following ratios should be calculated:

* Inventory holding period (normally days)
* Receivables period (normally days)
* Payables period (normally days)

How do we calculate the periods?

|  |  |  |
| --- | --- | --- |
| Name of Ratio | Formula | State result as |
| Inventory Holding Days | Average or closing inventory/Cost of sales x 365 | Days |
| Receivables days | Receivables/ Credit sales or Sales x 365 | Days |
| Payables days | Payables/Credit purchases or Purchases or Cost of sales x 365 | Days |

The Working Capital/Efficiency Day ratios:

Inventory days......the lower, the better.

Receivable days.......the lower, the better.

Payable days......the higher, the better....(within reason\*.)

\*If the company takes *too long* to pay its suppliers, it’ll get a poor credit reputation**.**

Please note: Instead of taking “*year-end*” data......it is thought to be “*good practice*” to use data for *average* *inventories*, *average* *receivables* and *average payables*....by taking start-of-year and year-end figures, adding them together, and dividing by 2; this is provided the start-of-year data is available.

**Overtrading**

Overtrading happens when a company grows too quickly, and, as a result, runs out of finance and hence cash!

The company may be profitable and profits may be increasing but the company doesn’t have enough long-term finance to invest in assets.

Typical symptoms of over-trading are:

* Rapid increase in sales revenue but low gross and operating profit margins
* Rapid increase in the level of current assets and current liabilities
* Low cash balance but big bank overdraft
* Increase in receivables days, inventory days and payables days
* Increase in current ratio

**CAPITAL STRUCTURE/GEARING RATIOS**

For these ratios assume DEBT = NON-CURRENT LIABILITIES

|  |  |  |
| --- | --- | --- |
| Name of Ratio | Formula | State result as |
| 1. Gearing ratio | Non-current liabilities/ Equity and Non-current liabilities  page34image45157952 | % |
| 2. Gearing ratio (alternative) | Non-current liabilities/Equity  page34image39111936page34image45158144 | % |
| 3. Interest Cover ratio | Operating profit/Finance charge [or interest]  page34image45158336 | times |

Gearing ratios indicate the level of gearing (amount of debt) in a company and hence the level of financial risk to shareholders.

A high gearing ratio means more financial risk to shareholders. A low interest cover ratio means more financial risk to shareholders.

**INVESTORS/STOCK MARKET/ SHAREHOLDERS’ RATIOS**

|  |  |  |
| --- | --- | --- |
| Name of Ratio | Formula | State result as |
| EARNINGS PER SHARE or EPS | Earnings (profit) after tax /Number of ordinary shares in issue  page30image45303488 | Pence or [cents] |
| DIVIDEND PER SHARE or DPS | Dividends paid to ordinary shareholders/ Number of ordinary shares in issue  page30image45303680 | Pence [or cents] |
| DIVIDEND COVER | Earnings (profit) after tax/Dividend paid to ordinary shareholders [or EPS/DPS] | times |
| DIVIDEND YIELD | Dividend per share /Market value per share (i.e. share price) | % |
| PRICE - EARNINGS RATIO or P/E | Share price/Earnings per share | times |

**Some key points about investors/stock market/ shareholders’/ ratios**

Dividend per share (DPS) and earnings per share (EPS).

Ordinary shareholders receive dividend (DPS). This is the main (yearly) return to an ordinary shareholder.

These ratios represent the dividend paid on each ordinary share that is in issue from the earnings per ordinary share that is in issue.

Investors generally expect both the dividend per share and earning per share to increase steadily each year. The percentage change in earnings per share is an important trend that is analysed.

An increase in the earnings per share (EPS) each year means that there is more profit available to each shareholder who invests in the ordinary shares of the company.

Dividends and dividend cover

A high dividend cover ratio indicates that a company is retaining and reinvesting (in productive assets) a lot of the profits that are being generated. Reinvesting the retained profits leads to an increase in the value of the company (i.e. may lead to high growth, higher share prices and capital gains).

If the dividend cover is high it may also indicate that the company is likely to be able to maintain or grow the dividends in the future even if profits fall. An investor will be confident that the current dividend can at least be maintained in the future

Dividend yield

The dividend yield represents the percentage ‘return’ to a shareholder if we ignore the possibility of the share price changing over time.

Price earnings ratio

The P/E ratio tells us a lot about how much confidence investors have in the future of the company.

If the P/E ratio is high it generally means that investors have lot of confidence about the future potential of the company.

A high P/E ratio means that investors are prepared to pay a high price for one share in relation to the current earnings being generated.

A high P/E ratio may be a result of:

* The current earnings per share being unusually low e.g. because of exceptional costs. Investors expect earnings to return to ‘normal’ in the future
* Confidence that earnings will grow at high rate in the future
* A belief that the risk attached to future earnings is low

**Example 1: Volkswagen – background information**

The world’s largest automobile maker by sales volume and value! Has many strong brand names.

4 reporting divisions:

* Passenger cars
* Commercial vehicles
* Power engineering
* Financial services





Volkswagen – diesel emissions scandal

In September 2015 the US Environmental Protection Agency discovered that VW had intentionally programmed their engines to ‘cheat’ emissions testing. The emissions of were found to be 40 times higher when the vehicles were used on the road compared to the vehicles being used in laboratory settings!

*The share price fell by a third on the announcement of the news.*

In April 2016 VW announced plans to spend €16.2 billion on rectifying the emissions issues. This included refitting the vehicles as part of a recall campaign.

VW has also faced significant legal action including fines by regulatory authorities and legal action by affected customers.

**Example 2: This is an assignment question for a previous group.**

**TITLE: Business Performance**

**Case Study: RS plc**

**Background Details**

RS plc is a medium sized well-established retailer which started up as a family business in the 1960’s in Manchester. During the 1970’s and 1980’s it began to expand its operations to other cities in England.

You work for a business consultancy firm. Your manager provides you with the latest Income Statement and Statement of Financial Position of RS plc.

Using information supplied below you have been asked by your manager to use a number of financial tools/accounting ratios to analyse the financial performance of RS plc and offer suggestions (if any) to improve upon the financial performance and position of RS plc.

In order to fully produce a convincing assessment, you will need to illustrate and explain each of these ratios, the formula, calculation and result. Discuss the judgments and conclusions drawn from your analysis.

The following information refers to the period 1 January 2019 to 31 December 2020

**RS plc**

***Income Statements (in £m)***

*2020 2019*

|  |  |  |
| --- | --- | --- |
| Sales revenues | 830.4 | 746.5 |
| Cost of sales | (646.2) | (577.8) |
| Gross profit | 184.2 | 168.7 |
| Administrative expenses | (56.8) | (41.2) |
| Selling & Distribution costs | (20.6) | (19.7) |
| Operating profit | 106.8 | 107.8 |
| Net income from investments | 14.0 | 13.5 |
| Profit before tax | 120.8 | 121.3 |
| Tax payable | (37.4) | (33.7) |
| Profit after tax | 83.4 | 87.6 |
| Dividends | (17.2) | (24.1) |
| Retained profit | 66.2 | 63.5 | |

***RS plc***

***Summarised position statements (in £m)***

*2020. 2019*

|  |  |  |
| --- | --- | --- |
| **Non-current assets** | 237.4 | 176.6 |
| **Current assets** |  |  |
| Inventory | 104.7 | 87.0 |
| Receivables | 43.2 | 48.4 |
| Cash at bank | 271.6 | 156.2 |
|  | 419.5 | 291.6 |
| **Total assets** | 656.9 | 468.2 |
|  |  |  |
| **Equity** |  |  |
| Share capital (25 pence ordinary shares) | 45.2 | 45.2 |
| Share premium | 2.8 | 2.8 |
| Retained profits | 185.2 | 119.0 |
| Shareholders’ funds | 233.2 | 167.0 |
|  |  |  |
| **Non-current liabilities** |  |  |
| Long term loan | 77.5 | 67.0 |
|  |  |  |
| **Current liabilities** | 346.2 | 234.2 |
| **Total equity and liabilities** | 656.9 | 468.2 |

**Additional Information:**

* Share capital consists of 180.9 million shares
* Market price following the publication of the above results, market price stands currently at £5.80 per share, compared to £4.50 a year ago.

**Required: As an external consultant you are required to conduct appropriate ratio analysis commenting on their profitability, liquidity and efficiency.**

The indicative solution below in the next page is an example of how financial information is used to calculate the relevant ratios and provide a commentary on the financial performance of the company.

**INDICATIVE SOLUTION [The answer provided here may be above the standard expected under exam conditions.]**

**Ratios and commentary for RS plc**

**Profitability**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Profitability ratios | Basis of calculation | 2020 | 2019 | Comments |
| GP  margin | GP/sales x 100 | 184.2/830.4 x 100 = 22.19% | 168.7/746.5 x 100 = 22.6% | GP margin has been held |
| NP margin | PAT/Sales x 100 | 83.4/830 x 100 = 10.05% | 87.6/746.5 x 100 = 11.74% | Shows declining NP |
| Admin to sales | Admin/Sales x 100 | 56.8/830 x 100 = 6.8% | 41.2/746.5 x 100 = 5.5% | Shows a significant increase |
| S&D to sales | S&D/ sales x 100 | 20.6/830 x 100 =2.48% | 19.7/746.5 x 100 =2.64% | Shows savings/efficient management of S&D |

Comments on profitability:

Although GP ratio has held up fairly well at 22.19%, there are clear signs of declining overall profitability. Investigation must focus on the increase in administration expenses, significantly up from 5.5% to 6.8% of sales revenue.

**Liquidity**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Liquidity ratios | Basis of calculation | 2020 | 2019 | Comments |
| Current ratio | Current assets/Current liabilities | 419.5/346.2 =  1.21 or 1.21:1 | 291.6/234.2 =  1.25 or 1.25:1 | Current ratio is maintained over both years. |
| Quick ratio | Current assets – inventory/ Current liabilities | 419.5 – 104.7 /346.2 = 0.91 or 0.91:1 | 291.6 – 87/ 234.2 = 0.87 or 0.87:1 | Quick ratio has improved marginally |

Commentary on liquidity:

The company has maintained a solid current ratio boosted by a significant increase in bank balances. This is lower than the ‘rule of thumb’ yardstick of 2:1, the size of the bank balances and that this is a retailer (with relatively high levels of cash sales) means that, even at 1.2, it reflects a comfortable liquidity/working capital position.

The marginal improvement in the quick ratio is also due to the high bank balances and is close to the yard stick of 1:1. This represents a heathy liquidity position.

**Efficiency/Working capital management**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Efficiency ratios | Basis of calculation | 2020 | 2019 | Comments |
| Inventory holding | Inventory/cost of sales x 365 | 104.7/646.2 x 365 = 59 days | 87/577.8 x 365 = 54 days | Shows an increase due to increasing inventory levels. |
| Receivables days | Receivables/Sales x 365 | 43.2/830.4 x 365 = 19 days | 48.4/746.5 x 365 = 24 days | Substantial improvement in the average collection period |

Commentary on efficiency/working capital management:

The increase (and so worsening) in inventory holding from 54 to 59 days requires attention on the realisable value of inventory in the future. Alternatively, is this increase a result expansion (as seen by the increased investment in non-current assets in 2020).

There are positive signs with the improvement in receivables management and is indicative of a more effective credit control function.

**Summary/Recommendations:**

Improvements in inventory management may improve profitability.

There may be some concern about the growth in bank balances, which seems to have occurred at the expense of current liabilities. It seems that the company has decided to restrict (reduce its dividends) its dividend pay-out, perhaps to conserve cash for the future, although its bank balances are strong. Is the company considering to further its productive directions, e.g. even more investment in non-current assets? This may be also be reflected in the increase in the share price – a sign of confidence by investors and the stock market.

**END OF LECTURE NOTES**