Decision-Making using Financial Ratios

Mqondisi Bhebhe

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1st edition
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ISBN 978-87-403-2628-4

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ABOUT THE AUTHOR

Mqondisi Bhebhe is an academic, a Management graduate and published author in various disciplines, but with more emphasis on Academic Writing skills and Business/Economics. He has been, and still is, teaching at tertiary level and enjoys sharing his knowledge and experience with readers from all over the world. This is the third of the five upcoming editions of the 'simplified' series, with the first two already published. From the author of the Human Resource Management Solutions Textbook and the Academic Writing Guide for University Students, here is another comprehensive but simplified guide to using financial ratios in a practical setup, aiming to make studying easier for you. Please enjoy this work and look out for the next volumes.

Happy studying!

1 INTRODUCTION

Objectives

In this unit, we will:

- **understand what ratios are and their importance**
- **understand the source and use of financial ratios**
- **discuss the various users of financial ratios and where they fit in within the financial accounting cycle.**
- **introduce the main types of financial ratios.**

Chapter focus:

Successful human beings are those who introspect and correct their mistakes before they make them. The greatest minds in business in this world have used their own personal mistakes/struggles and turned them around to their advantage-and that is the major difference that stands between them and us. If we can measure our successes, it means we can also quantify our shortcomings and know what needs to be done to achieve our goals.

The same can be said with running successful businesses. Businesses require successful revenue management to maintain the best financial position throughout the various fluctuations and seasons. However, financial leaders have no direct control over everything affecting businesses, especially the broader scope of the external environment like the macro-economic variables, which requires them to wisely use what they have in order to remain viable.

At the end of every trading period or at relevant intervals, financial statements are compiled in order to summarise the activities that the business would have undertaken and measure its progress. It is not necessarily the ability to prepare these statements and present them to the authorities that matters, but it is how the business uses such information to pinpoint areas for improvement in future. These statements must be analysed using a number of metrics and different angles to define the true position of the business when compared against its goals and in relation to the whole industry at any given time.

Users of financial statements assess an organization's financial position when making decisions that may include approving capital financing, awarding donations, drawing professional contracts and other matters necessary to sustain corporate success. An organization's financial position can be improved by adhering to procedure when preparing financial information, so that they can be analysed and later put to use in a constructive way.

Financial ratios are often used in addition to the main financial statements to assess the relative strength of businesses by comparing amounts therein against each other or those of their competitors in the industry. Ratios measure the efficiency, liquidity, stability and profitability of businesses, giving governments, shareholders, investors and many stakeholders a more detailed but summarised view of a business' financial position. These ratios provide a better insight for decision making than ordinary statements, which sometimes contain information not properly formatted for decision-making and they fit very well in the accounting cycle depicted below.

1.1 THE ACCOUNTING CYCLE

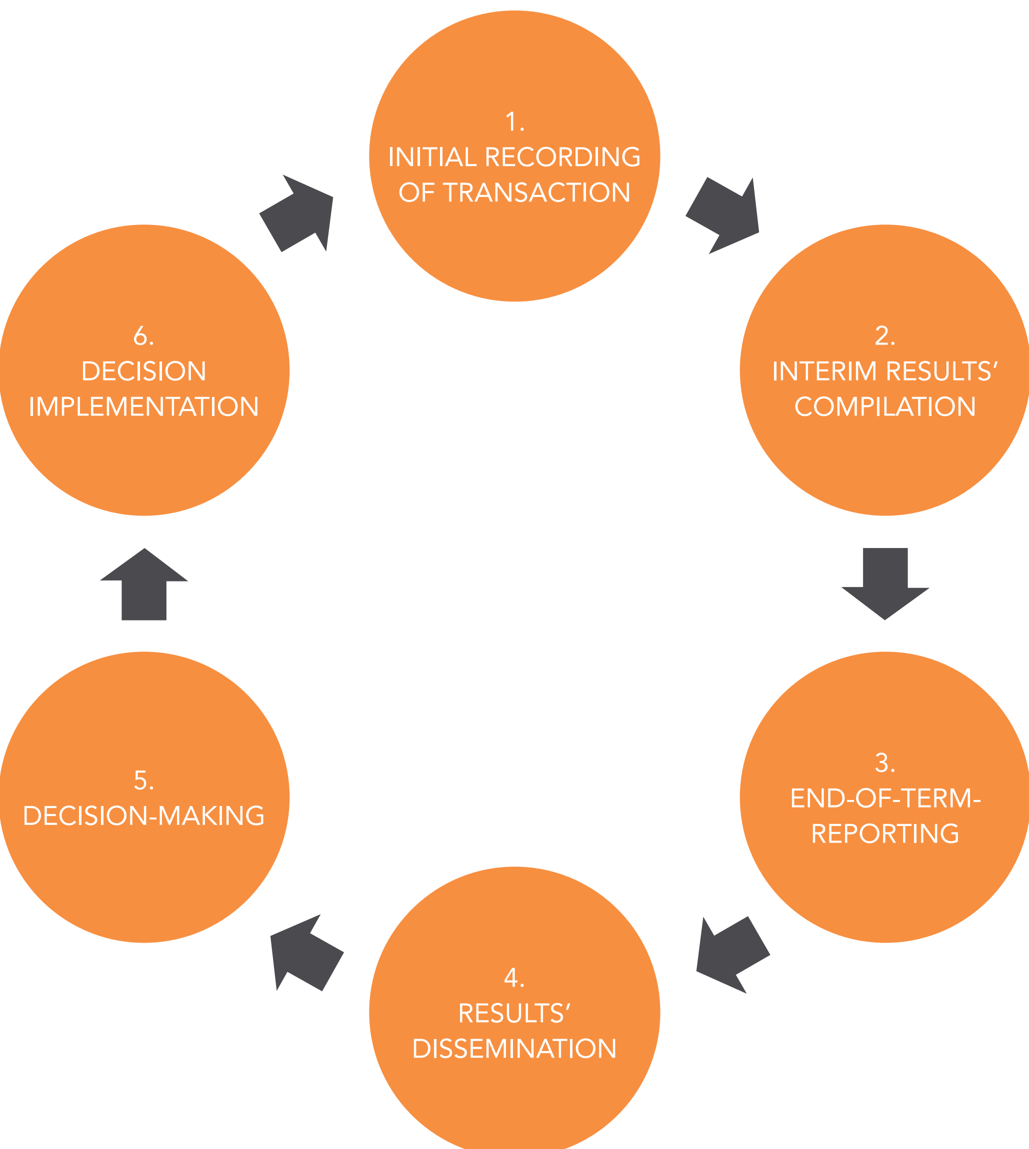

Fig. 1. The accounting cycle: It all starts with the occurrence of the basic transaction, which goes through all the documentation and reporting process until decisions are taken and implemented; the cycle goes back again to the beginning when implemented decisions are incorporated into the operations process; this is where the recording begins and flows over again in the subsequent trading periods. Ratios are very important in speeding up stages 3 to 6, which, in turn, leads to an improved performance in stages 1, 2 and the rest of the cycle.

1.2 THE BALANCING GAME

Whether we are aware of it or not, everyone has had to balance certain changing variables in order to maintain a consistent desirable outcome in one way or the other and that might be happening every day. For example, we set goals when we are drinking coffee in the morning. All we know is the desired level of sweetness we want, the strength we desire, the flavour and the warmth, at times, from a cup of coffee. However, things are not always the same and we find ourselves holding a different mug, different brands of coffee, sweeteners and other ingredients. No one can say that, since they take two sugars every day, they will enjoy that no matter how big or small the cup is; when the cup is small, two sugars will be too sweet and when it is bigger, the sugars will lose their taste in the water. This calls for the balancing act; one automatically decides which ingredients they want to adjust for them to get the same desired taste and flavour from their coffee. This is best illustrated below:

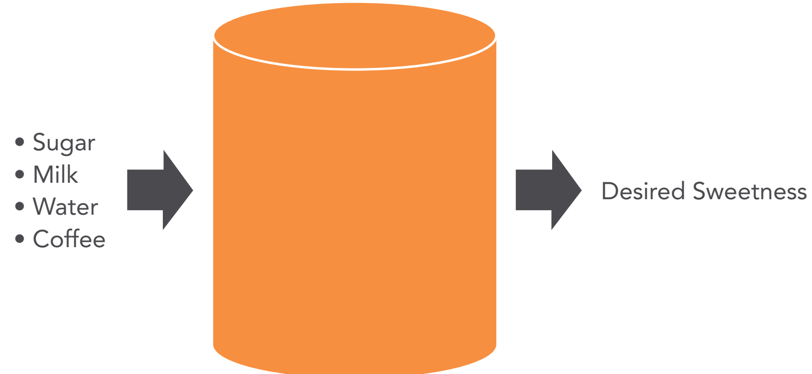

Fig. 2. An illustration of the balancing function that users of financial ratios are faced with. Just as we adjust the amount of ingredients to achieve a constant result in sweetness, different stakeholders also aim to adjust various components of financial ratios in order to achieve business success.

Financial ratios are like the coffee ingredients while the business objectives are like the desired taste we need from our coffee. One knows the taste they need and they use that to determine how much sugars, milk and coffee sachets they will require under different circumstances and they keep working on it, adjusting them and making sure they achieve the desired result. Users of financial ratios also have different objectives and each one knows what they need to adjust in order to achieve them. Here are the basic users of financial ratios:

1.3 USERS OF FINANCIAL RATIOS

Just like any other financial accounting function, financial ratios concern a lot of groups and individuals, who have an interest in the business either directly, indirectly or as third parties. Because all these persons/institutions are involved in the running of the business in one way or the other, they need to be accurately informed. Here are some of them just to name but a few:

1) **Management**
   Managers have a role of planning, organising, leading and controlling the daily operations of a business, directing everything towards the accomplishment of some cause/goal. The use of ratios is essential in planning, in determining what the scope and scale of operations will be like and organising all the resources required for achieving such standards/target ratios at the end of the period. This helps the manager in drafting an action plan on how the leadership roles necessary to influence subordinates to co-operate with the goals will be undertaken. Therefore, it is the use of ratios that will help the management to compare every level of progress with the internal targets and competitors across various industries.
2) **Financial institutions**
   The biggest headache that bankers and lenders have will always be how their money will be repaid once credit has been granted. It is often very hard to determine the willingness and the ability to repay a loan by merely looking at bank statements and so on, since a lot can change unexpectedly and there are always other deeper and hidden issues too complex to foresee. This calls for the use of many metrics and units of measurement so as to view this from a number of angles. These finance houses will be interested in closely examining the solvency, profitability and liquidity of the business to determine how much credit to grant, at how much interest and over how long a period.

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3) **Investors**
Like the bankers and lenders, no one wants to "bet on a wrong horse," to put this in everyday language. While it is interesting to believe that investors are brave people who often see an opportunity where an ordinary eye doesn't, they channel a lot of funds in it and patiently wait until they earn their returns at sufficient profits; we must not take it for granted and leave it to them to use their adventurous instinct on deciding whether to invest with us. We must show them all profitability, liquidity, solvency and efficiency ratios, to convince them of a guarantee that their funds will be safe in our business. In other words, they are must see the profit potential, the safety and security of their funds before investing.

4) **Government**
Businesses are very important for every government since they contribute towards the overall fiscal targets and operations. Many governments rely on the private sector to reach their employment targets and as a main source for revenue to use in service delivery through various forms of taxation. The levels of activity in a business determine how much tax they will pay, and it is through such business returns that the state can plan its legislation accurately. All returns in terms of labor turnover, sales tax, VAT components etc., are best read when presented also as ratios, for quicker understanding.

5) **Unions**
These are monitors in the industry, formed to represent certain groups in the negotiating tables; they, too, need accurate information on the performance of the businesses within their industry if they are to successfully negotiate salaries and working conditions for their members. Unions, who have no idea of the industry norms and the level of profit the businesses make, often bring unreasonable demands and orchestrate extremely harmful strikes that hurt the workers, their employers and the whole industry.

6) **Employees**
All employees list job security at the top of their priorities when deciding whether or not to commit their lives to particular employer. The second goal is an opportunity for growth, promotion and more benefits like housing, fringe benefits etc. There can be no job security or promotion prospects if the key performance ratios are on the negative side, and businesses risk losing their best performing employees, if rival businesses seem to be performing better. Employees are very much interested in the profitability, liquidity and solvency ratios in order to keep their job security concerns, bonus expectations and wage bargaining hopes alive.

7) **Clients**
Major customers who rely on our business for their merchandise/raw materials are always interested in knowing how our business is run. Because many of them buy on credit, it will do them a lot of good if they can be assured that their credit lines will remain open or even increase in future. A business with liquidity and cash flow problems cannot be in a position to grant/extend credit to others, since it also needs funding/cash injection itself. Therefore, liquidity ratios of the company will convince the clients that normal credit relations will continue to exist into the foreseeable future.

8) **Suppliers**
Suppliers are sources of raw materials and trading merchandise that is essential for the business' production processes. These entities need reliable clients, meaning the business must first convince them of its ability to repay loaned goods and services within specified time, always. Suppliers will smile at the clients who show a lot of growth potential in their ratios and will always prioritise those with good solvency, profitability and liquidity ratios, treating them very well too. It is, therefore, important to always know that clients will be able to settle their short-term obligations as and when they are due, and continue to survive into the foreseeable future.

1.4 TYPES OF FINANCIAL STATEMENTS USED FOR RATIO ANALYSIS

Financial results are encoded in these forms:

a) **Income Statements,**
The Trading Profit and loss account shows the comprehensive income that has been realised throughout the period. It explains how revenue was realised and how much was spent in the process; the difference therein will be the profit. Key figures to note here are Sales, Expenses, the Gross and Net profits, which are compared with other figures to see how proportional they are to the scale of production. Despite having very attractive net profits, certain businesses often find ways of optimising their operations here, when they realise how high the percentages of operational costs are, compared to sales. The idea is to eliminate unnecessary expenditure so as to be productive and profitable.

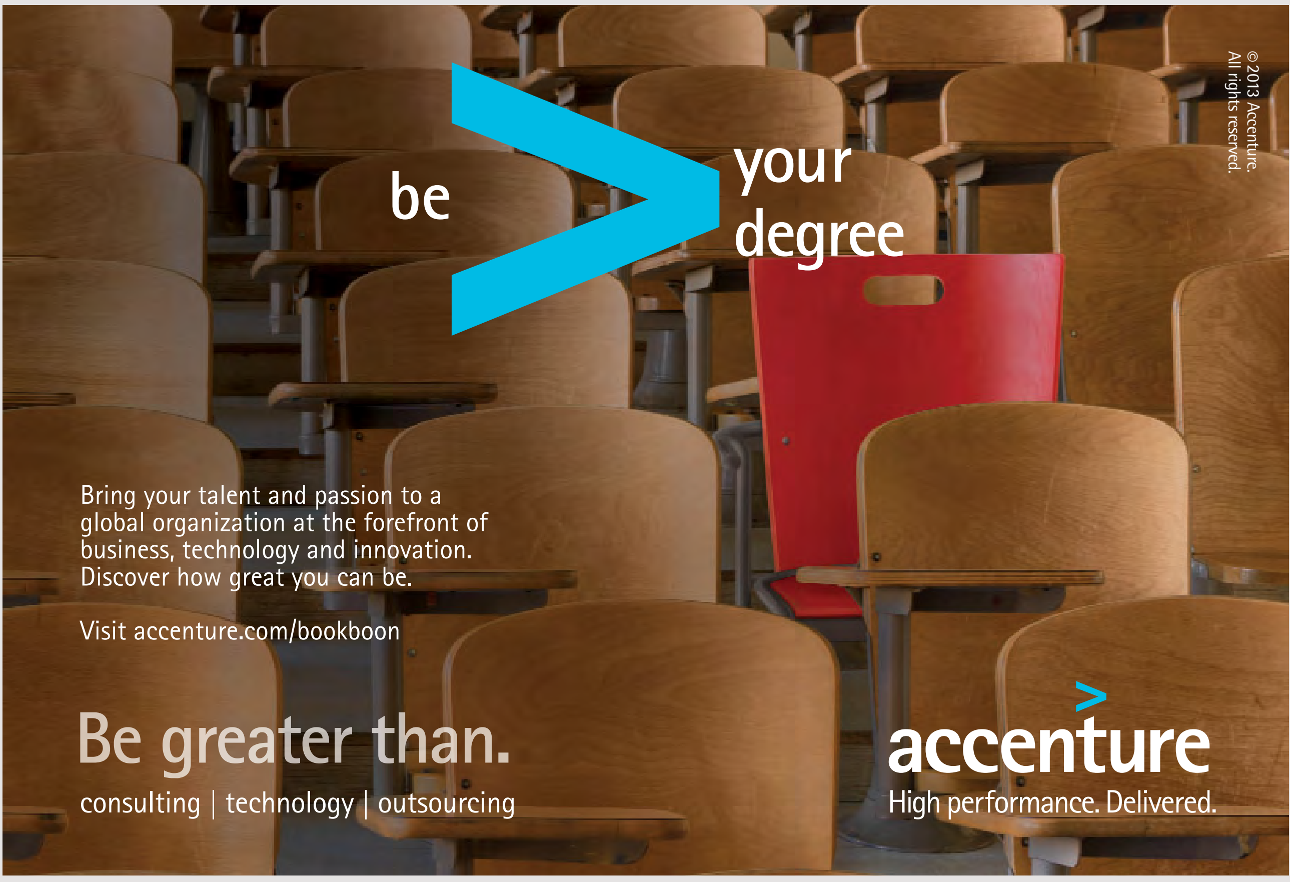
b) **Balance Sheets,**
These show the comparisons between the amount of assets the business has and the liabilities that still need to be settled. The difference after subtracting the two basically represents the net equity, or the amounts which are fully owned by the shareholders. Key elements here are the Current and Fixed assets, liabilities and cash and cash equivalents, which are all compared with each other to see how each amount influences the other.

c) **Cash Flow Statements,**
Many businesses, through their income statements, show profits that they may never receive because of the processes of Accrual accounting. Modern businesses record revenues when earned, not necessarily when received, which often poses problems if the amounts later go uncollected. With frequent opportunities for credit sales, it is often prudent to refer to the statement of cash flows to see the amounts actually received or spent, to determine liquidity. The statement of cash flows contains amounts not in the income statement, which can explain where the money was

raised, and how it was spent. This is an excellent way of measuring liquidity. It also helps differentiate between incidental income (from financing, sale of assets, etc) and regular income from operations. Ratios drawn from it can be a good measure of determining how debts will be paid, and incomes raised for further operations.

d) **Ratio Analysis.**

A ratio is a number, as expressed as a fraction of another. The subject of comparative ratio analysis helps the business managers to quantify all key result areas and bring them within their control, by using a number of metrics and techniques. The list of summarised ratios, in which key performance items are, expressed one as a fraction or percentage of the other, usually complement the main statements and make it easy for policy makers to make informed decisions. The section can come after the main statements, as an annexure or as a cover page, aiding the executive summaries in some instances.



1.5 ADVANTAGES OF FINANCIAL RATIOS

Long-term comparisons

Ratio analysis compares financial data over a long stretch of time. It is easy to calculate the same ratios over different time periods to identify trends and patterns. This is often the first step taken in improving businesses that are declining. Many ratios can be calculated over long time periods like five to 10 years to make sure the mistakes that were made a long time ago, will never be repeated again throughout the lifecycle of the business.

Benchmarking with Competition

It is important to always compare ourselves with others to see if our goals are realistic or not. When businesses are in the same industry, they use the same labor, similar raw materials, serve the same market and even sell homogenous products. This means they have the same problems and have to deal with the same struggles in order to be successful. Companies that do not benchmark their performance against their peers find it hard to fight off competition in future, and this leads to their downfall. Therefore, setting targets for their ratios to be slightly above industry averages often helps businesses to survive and grow in the long run.

Aids to decision making

Ratios try to establish the relationships between amounts in financial statements, in order to show policy makers how changing one may affect the other. Many elements can be controlled by only adjusting one or two in order to achieve the targeted results faster. E.g. reducing operational expenses can increase net profit, dividends, earnings per share and retained earnings, and vice versa if expenses increase. As pointed out earlier, the users of financial information need to understand how well a business is performing in order to identify all critical areas requiring improvement, and this can be sped up using the ratios, which are conveniently 'small' figures to deal with and comprehend.

Comparing businesses of different sizes

Many conglomerates and holding companies, interested in identifying companies for takeover, can only rely on ratios and relative amounts to determine how well the companies are performing. While a big company with $2 billion turnover could be earning more than a smaller one

with $1 billion; the turnover must be proportionally compared to its expenses to determine its efficiency. We may find the smaller company with a proportionally lower percentage of expenses to sales and with an even higher net profit than that of the bigger company. Even other ratios like liquidity may still favour smaller companies compared to the bigger ones; so ratio analysis goes a step further in refining decision making for many stakeholders.

Effective Management planning

We mentioned earlier that management has the duty to plan and direct the way forward for the business. This needs actionable goals to be in place, and to be prepared in a language that can be understood by various stakeholders. Ratios can help entrepreneurs create sound business plans and professional presentations to convince lenders and investors. It takes businesses that can understand ratios, to learn from, interpret the trends in the industry and use them in preparing reasonable financial goals/targets. It is easier to set financial goals, budgets, production targets and operational procedures, if management understands what each set of ratios means to the business' survival.

Simplification of financial statements.

Ratios provide a numerical summary of all the financial statements by presenting important information in simple form. The use of small numbers, decimals below 1 or 10, or simple percentages, is very easy, compared to reading blocks of text and very long statements some with up to fifteen columns and over 100 rows. Policy makers can comprehend the ratios and easily tell if the business is doing well or not.

1.6 MAIN CLASSES OF FINANCIAL RATIOS

The four major groups of rations measure the organization's profitability, liquidity, leverage (gearing) and efficiency, as we are going to learn in the following chapters.

2 PROFITABILITY RATIOS

Objectives

In this unit, we will:

- **define profit and its constituents**
- **explore various profitability ratios and their interpretations**
- **suggest ways of improving profitability and its ratios**
- **consider certain limitations/precautions to bear in mid when dealing with profitability and its metrics.**

2.1 CHAPTER FOCUS

Profit is the bottom line and the main objective of establishing businesses. Businesses without profit fail to grow, pay workers, expenses and other operational obligations. Therefore, the lack of profit is the biggest sign that the businesses are facing difficulties that might result

in bankruptcy and closure. Without profit, there may soon be no funds available to pay staff, meet operational costs, pay creditors and other important obligations. As a result, investors, creditors and financial institutions are very much interested in the profitability potential of the business, before making any decision to be part of it; so rest assured that they will examine this section very carefully.

To stay profitable and competitive in any business environment, a lot must be done in minimising expenses and maximising revenues and turnover. This needs extra care in measuring how much is actually generated by every asset and staying on the lookout always, for ways by which to improve the usability of the business' resources. Profit can be simplified using the following equation

REVENUES - EXPENSES = CORPORATE PROFIT

Fig. 3. The simplified profit equation (There are many components that fall under the three main areas noted above, depending on the nature of business and size of the organisation). Negative profit occurs when Expenses exceed Revenues while the positive is seen where Revenues are more than the latter.

The task of identifying which variables in the profit equation need to be doubled, tripled, multiplied, halved or subtracted from each other can be very demanding and full of mistakes. This is the reason why we refer to financial ratios, for their standardised approach and universal measurability. These numbers may appear simple, but surely, they can improve the quality of decision-making and help management to narrow down its effort towards the real areas that need attention.

Profitability ratios show, among other things, how well the business uses its assets and capital to increase revenues and create enough profit to make funds available for growth and diversification of operations. They study the income statement amounts and categories to establish the strength of a company, and profit is the best way of measuring it. Here, we are interested on a business' return on investment and the growth in its wealth creation capabilities among other items.

On the other hand, though, profit, it must be understood, is measured in many dimensions and from many schools of thought, to ensure the growth of the business is guaranteed. We will now discuss some of the ratios which determine not only the amount of profit generated by the business but the level of profitability in relation to the industry and just how sustainable profit can be in the future. Face values of profit margins have often proved to be unreliable and difficult to manage, since they contain a lot of details which could be misleading at times.

Therefore, for profit to be relied upon, it must be regular, sustainable and reflect the real situation on the ground and be actionable. Some profit figures are achieved through non-monetary transactions and non-value adding activities, e.g., asset revaluing can inflate profits in the books, depreciation adjustments can raise optimism while uncollected receivable amounts can be mentioned together with incomes actually received. These ratios are now going to explain how good or bad it is to rely only on certain values alone, and why it will be important to have overall summaries before making decisions.

2.2 RETENTION RATE

At the end of the trading season, a decision has to be made, regarding to the amounts to be made available to finance the following year's operations. This is due to the fact that other forms of financing like debt and equity financing can take time to approve and they also come with certain strict conditions from the giver, which may not be the best ideal situation for the business. This is why, despite it being attractive to lure investors with huge dividend pay-outs, the company still needs to keep some money in its reserves, to avoid over-relying on the investors as the only source of funding.

The retention rate is also called the plowback ratio; it reports on that part of the profits that are left unused at the end of the year; after paying dividends, taxes and setting aside funds for various contingency plans (MyAccountingCourse, 2017). All companies need to maintain consistent reinvestment rates, if they are to convince stakeholders of their potential to succeed in the future. It is the retained earnings that show that enough profit is being made, with a lot of excess to be made available to replace assets, expand operations and other important contingencies.

Formula=Net Income less Dividends/Net Income for the year

E.g. Net Income =500
Divizdends =200
Retention rate = (500-200)/500
=300/500
=0.6 or 60%

This company retains 60% of the previous year's profits to finance additional projects.

Low rates are a cause for concern and must be avoided, since they may indicate ineffective management. Higher rates are attractive, but only within reasonable limits, because when too high they may scare away potential future investors if they get the impression that management is hostile and doesn't pay enough dividends.

2.3 RETURN ON ASSETS RATIO

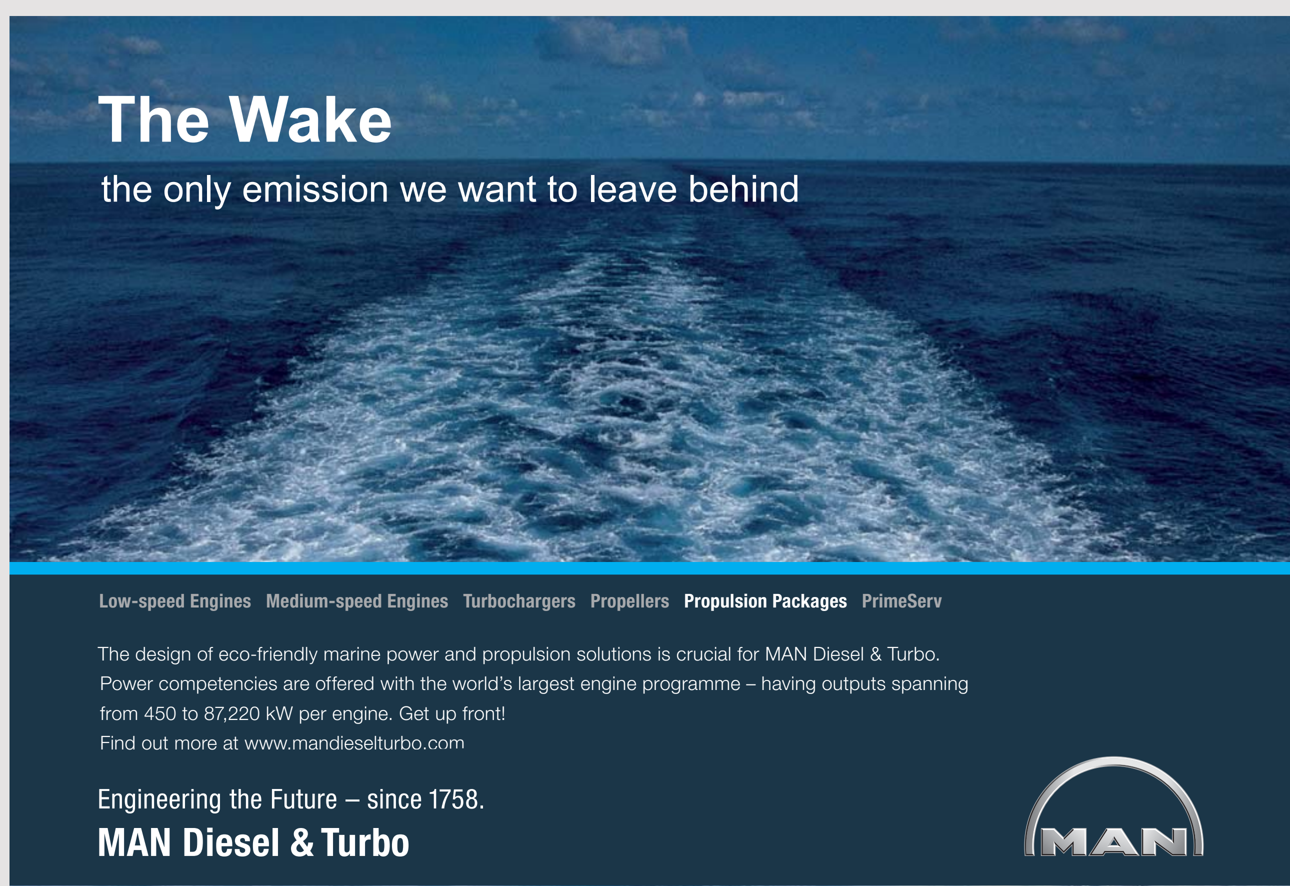
All companies, whether profit-oriented or not, are expected to make significant and visible returns with each asset employed in the production process, otherwise the investors will start questioning if it was the right thing to put their money in a risky environment in the first place. This would be dangerous if the company has future growth ambitions. The return on total assets, reports on the net income produced by all assets during the financial period; comparing net income realised to the average total assets. (My Accounting Course, 2017)

Formula=Net Income/Average total assets

E.g. Net income =500
Average assets =1000
ROA =500/1000
=0.5 or 50%; or 1:2

This means for every unit of net income, at least two units of assets are required.

A higher ratio (which indicates more incomes requiring fewer assets to produce) is favourable and is often a good indicator of rising future earnings too. Lower ratios may lead to investors withdrawing their capital or seeking to scale down operations to spread the losses over a small investment.



2.4 TIMES INTEREST EARNED RATIO

Because attracting investors is often touted as the best way of financing (which leads to very low retention rates), businesses need to rely more on debt financing, which unfortunately incurs some interest charges. This ratio measures the amounts from the income that are used to pay interest expenses in the event of raising finance through external debt (Accounting Explained, 2017). Companies must be able to meet their interest expenses and conveniently pay all debt obligations as they fall due; meaning struggling to pay these kinds of expenses (like interest) can be viewed negatively and taken as threats to the growth potential.

Because businesses need to pay as much dividends out to shareholders as possible, this places extra burdens on them to use their own management ability to generate short-term capital through loans and other means without having to bother the owners for additional capital injection all the time. Creditors and financial institutions also recommend higher times interest ratios because they indicate ability to repay loans and advances in time (and profitably for them), without risks of bad debts which are negative indicators for them.

Formula= income before interest and taxes/interest expense.

E.g. IBIT = 3000
Interest expense =1000

Times Interest Earned Ratio = [3000/1000]*100
=300%

Higher percentages are highly favourable when compared to lower figures. e.g., in this case the ratio is 300%, meaning the business makes enough income to pay its interest expenses 3 times over i.e. the company's income is 3 times higher than its interest expense during the period. Lower figures, in the same vein, must be avoided at all cost.

2.5 RETURN ON EQUITY RATIO

This is the measurement of the rewards to the business' owners in net income, expressed or when compared to what they contributed/invested in the business (MyAccountingCourse, 2017). It is also helpful for those speculative investors in deciding on when to invest in a company and on how much they may have to bring.

Formula = net income/ shareholder's equity.

Shareholder's equity = 5000
Net income = 3000

ROE = 3000/5000
=0.6

Every business strives to use a few units of shareholders' funds to produce a higher proportion of net income. Negative figures are those that indicate that the Shareholders' equity is very high as compared to net income, and this scares investors away.

2.6 RETURN ON SALES RATIO

High sales do not necessarily mean high profits. It can be noted that some sales may be high in certain times, seemingly indicating good fortunes, but coming at a very high volume of operating expense, still resulting in very low profits or even losses. It will be attractive for a company to minimise its expenses and maximise its profits from any given level of sales it makes (Investopedia, 2017).This ensures that the larger portion of the sales made will be available to convert into dividends and other future plans (which pleases investors a lot). This ratio measures that effect of costs in the net profit and offers insight on how to control them to remain viable and increase

It is important when guiding lenders and other stakeholders in determining how good/fast the business is at converting sales to the actual net income.
profit.

Formula = net income/net sales.

E.g.
Net Income or Operating Profit = 5000
Net sales = 3000

Return on sales ratio =5000/3000
=1.6

Higher ratios are favourable because they indicate that net income as the numerator is very big, when compared to net sales, the denominator. Lower margins are the reverse of that and will scare away investors if steps are not taken to control the runaway expenditure.

2.7 OPERATING MARGIN RATIO

Companies must earn the bulk of their revenues from their core products and be able to survive and grow sufficiently without relying too much on non-operating and secondary income, which is often accidental and beyond control of the management. This ratio seeks to show how much revenues remain after paying all the operating expenses (MyAccountingCourse, 2017). It indicates the profitability of a business' operations or its main business. Falling operating incomes require strategic changes including altering/enhancing the product ranges, pricing strategic shifts and various income generating activities.

Formula = *operating income /net sales*
E.g.

Operating income =4000

Net sales =2000

Operating Margin Ratio =4000/2000
=2

Higher margins are more favourable; they indicate that the business can survive from its core business without desperately relying on investors, loans, emergency funding and contingencies every time.

2.8 NET PROFIT RATIO (N.P.R)

Profit and sales are closely interrelated. There is no way by which we can talk about profit without mentioning sales. In order to have some profit, there must be sales first. This ratio seeks to compare the after-tax **profits** to the **net sales** achieved throughout the period and see if the business is maximizing its profits or not (Investopedia, 2017). The profit is an important measure of the success of the business since the liquidity, efficiency and solvency, can only be successfully achieved if enough profit is generated.

Calculation (formula)
(Net Profit (After Tax) *100) / Net Sales

E.g.

Net Profit	=2000
Tax	=1000
Net Sales	=3000

(N.P.R)	=(N.P. less Tax) *100) / Net Sales
	=(2000-1000)*100/3000
	=33.33%

Higher ratios mean that more profits are being generated from the sales and please the owners, both current and future ones. Lower figures mean there are a lot of costs and administrative expenses that need to be optimized and controlled before they grow out of proportion and start causing some losses.

2.9 OPERATING RATIO

This is the contribution of the net sales and the operating expenses in driving business success. It shows how expenses can be controlled to ensure that the final profit made is sustainable (MyAccountingCourse, 2017). As more profits are realized with fewer costs, the owners of the business realize that they now have to spend less, in order to get more, and this brings optimism in management and motivates workers to aim for more. However, fewer operational expenses could also mean low business activity and hamper growth ambitions. Therefore, a balance needs to be struck between the two for sustainable growth.

Formula= *Operational expenses/ Net sales

*This figure includes Production expenses and Administrative expenses.
E.g.

Production exp	= 4000
Admin expenses	= 2000
Net sales	= 5000
Operating Ratio	= (Production+ Admin Expenses)/ net sales
	= (4000+2000)/5000 (*100)
	=1.2 or 120%

Lower ratios are fav qorable because they indicate the ability to make more income, since the denominator (net sales is bigger than the numerator(expenses)).

2.10 SHARE PRICE TO EARNINGS RATIO

All stock exchange markets operate on the basis of supply and demand. Buyers are located on the basis of their willingness and ability to buy, while the sellers also indicate their interest to sell when their shares reach a certain preferred price. This results in speculation and placing less emphasis on the current actual prices of the shares. This ratio is used in analysing the difference between the market price of shares and their actual earnings (MyAccountingCourse, 2017). It helps investors to compare the earnings of a company in line with industry standards, to determine if the company they intend investing in, is either a market leader, an average player or is performing below the norm. Lower share prices are offered to companies below the industry average and better performing ones are often 'chased after', as they tend to withstand competition from rival firms in the same industry.

Formula =Market price per share / Earning per share

e.g.

Market price per share	=5
Earnings per share	=3
Price-Earnings Ratio	=5/3
	=1.67

Higher ratios indicate that market value is higher than the actual earnings per share, while lower ones mean the shares are worth more than what they are fetching for in the market. It helps speculators in planning when to buy and dispose of their shares profitably (they intend to buy shares when they are cheaper than their normal market price and sell them when they exceed their average values). Investor confidence; the conviction that the future is bright for the said company can also be measured in this way. In short, the lower the ratio, the better. This indicates that current earnings (denominator) are higher when compared to the general market prices (numerator) and will therefore wrestle the investors away from the bulk of the competitors on the stock exchange and other financial markets.

2.11 SHARE EARNING-PRICE RATIO

This compares the earnings per share to the prices of the particular shares and establishes the ratio that could be used to compare the wisdom of investing in one company over the other (MyAccountingCourse, 2017). It is not enough to say higher priced shares indicate good fortune for their holders, but the actual earnings from them may vary. It will be wise to pay less and get more actual earnings than the reverse of this.

Formula= (Earning per Equity Share *100) / Market price per Share

E.g.
Earning per Share =4
Market price per Share =2

Formula =((Earning per Share) / Market price per Share) *100

E-P Ratio =(4/2)*100
=200%

(The shares earn (double) more than the average market price, which is good). Generally, the earnings must be more than the overall market price of the shares if the company is to keep its crop of investors and attract more in future. So, the higher the ratio, the better it is for everyone concerned.

Contribution Margin

This is the comparison between the organization's sales/revenue and its variable costs, hereby showing us the sales amount that can be used pay off its various cost categories. Total costs are made up of fixed costs; the production costs that do not change regardless of the variations in the levels of production, e.g. land, rent, basic wages etc. However, Variable costs (e.g. overtimes, distribution costs, etc.) increase with the production levels and can get messier if uncontrolled. The contribution margin, therefore, shows management how the organisation can earn higher profits using lower variable costs and, the bigger the difference between the two, the better.

Formula = *total sales revenue - total variable costs.*

E.g.
Total Sales = 5000
Variable costs = 4000

Contribution margin = 5000-4000
= 1000

Variable costs have a tendency of increasing in proportion every time sales increase, so it will be desired to adjust operation techniques to see this margin increasing. A reduction in variable costs means there will be more income available to pay fixed costs and raise more profits.

2.12 DIVIDEND PAYOUT RATIO

While investors are always happy with companies that pay out reasonable amounts in dividends at regular and consistent intervals, it is actually the amount of net income in the dividends that worries investors, since high dividends must not deplete all the profits. It will be wise to pay out a reasonable amount of profits to the shareholders and still maintain a workable level of retention. It is easy to see if companies are too desperate to lure shareholders by using non-operating income in paying dividends, and if the dividends declared are sustainable in the future. The ratio ascertains the percentage of the net income that will end up in the actual shareholders' pockets (MyAccountingCourse, 2017).

Formula	=net income/total dividend
Net Income	=5000
Total dividend	=3000
DPR	=5000/3000
	=1.67

It is important not to just pay the dividends but to be consistent at it. Companies that skip years sometimes without declaring anything for their shareholders risk alienating new investments. Care must be exercised too, not to declare too much and then start experiencing liquidity problems later; this may show lack of proper leadership and a narrow-minded, short-term focus.

2.13 EARNINGS PER SHARE

Simply put, this is the actual earnings generated by each share, as the name suggests. It is the final amount that each ordinary shareholder would receive from the declared dividend at the end of the year (MyAccountingCourse, 2017).

Formula= net income less preference dividends / outstanding ordinary shares.

net income	=5000
preference dividends	=2000
outstanding ordinary shares	=600
EPS	= (5000-2000/600)
Each share will get	=$5

A Higher eps value is preferred to a lower one since it indicates that the company is well managed and the more will be available to reward the shareholders, investors and retain more for future operations, something that employees would like to hear as well.

2.14 WAYS TO IMPROVE PROFITABILITY

There are many ways by which profitability can be improved, depending on the situation. Managers must not only increase the prices of goods and hope to aggressively damage the reputations of other competitors etc. to ensure consumers focus on their own company, but they must be intelligent and implement SUSTAINABLE profit models that can benefit the whole business and maintain its ethical reputation in the market for a long time.

Sustainable profitability comes from within the organisation, decides on the best model to be used to penetrate the market, offer the right product, well positioned, priced and stabilise the growth rate to ensure more inflows from the core operations are achieved. According to Leung (2015), this could involve cost controls, reductions and adjusting wages and salaries if unusually high (although this method usually attracts a massive backlash from unions and internal resistance from the workforce. If unethically implemented, it could even lead to de-motivation in staff and hurt productivity)

There are many elements in the financial statements and reports that require constant monitoring to bring everything under control. Causes of the decline in key drivers must be thoroughly probed and solutions must be prescribed according to the situation. Here are some of the ways prescribed below:

Optimizing the supply chain

High ratios can be achieved by increasing the gross margin. This can simply require management ability to buy cheaper raw materials from quality, reputable suppliers and using the optimum processing methods to save costs, so that the final product cost will be as low as possible. The company can then implement various mixes in different combinations, i.e., low pricing to attract many customers and increase brand loyalty or higher pricing to premium markets to maximize the mark-up margins. Both methods achieve the desired result of profitability in the future.

The rule is that too low prices sometimes are viewed as admission of poor quality, their appeal falls as incomes rise; a new product slightly higher in price could come in anytime and compete with the company. Too high prices also scare away potential customers in the low income end of the market, and make it hard to penetrate such regions. The trick is to balance these factors and implement the price increases on an incremental basis while monitoring the penetration rate, so as to keep up with the demand and counter any moves from the competitors.

Change in sales targets set by management

Sometimes the problem with sales is not the market itself but the expectations from management may be making it unprofitable to operate. Companies which find they always performing below the belt in their sales goals need to re-examine themselves and see if it is not their unrealistic ambitions which are failing them.

For example a company serving a niche in a target market may overestimate the demand or over imagine there are many people living there, hire many sales representatives, assign many vehicles and distribution logistics to cover that particular area, and find out after forensic feasibility studies that the working population there and its disposable incomes are far much less than its overall sales targets. It will help for the management to look into different directions in future, so as to allocate marketing resources appropriately, control wasteful expenditure, and achieve more profits.

Changes in strategic marketing

When marketing goals are formulated, they involve both financial and non-financial objectives like market domination, penetration, brand loyalty and aggressive competition targeting. These goals must always be kept in check because most of them focus on spending more in order to build perceptions, maintain consumer confidence or "prove a point" without actual returns coming in, and eventually they will start eroding the profits through what may end up being called wasteful expenditure.

There comes a certain time when management must decide which community projects and brand familiarization drives will have outlived their usefulness and will have to be terminated to focus on the actual marketing goals that will bring physical and tangible results. Eliminating most if not all marketing expenditure that is not related to the actual selling process could save costs and improve profits in the near future.

Changes in the product mix

When sales start going down, many questions need to be answered especially when the economy is static or growing and incomes remain steadily rising. Could it be raising incomes and consumers now prefer better and more appealing products? Could it be changes in technology, or demographic composition of the buyers? Is it the entry of many young people in the market?
Many times, one of these questions is found to be relevant and needing urgent attention because consumer markets are dynamic and circumstances are not static, anything can change anytime in the external environment of a business, with little to be done in controlling it; only reacting favourably could save the situation. No company can succeed if it doesn't know its customers. It can be wise to introduce new products, change the current ones, modify them or change the pricing, distribution and other variables to appeal to new customers or keep up with the changes in preferences in the current crop of loyal clients. This monitors sales and keeps them rising.

Capacity limitations

There is a saying that no two individuals are alike; which applies perfectly yo all businesses as well. Businesses are formed by different individuals with different intentions/goals, from various backgrounds with different levels of capital and resources. It is often good to introspect and know one's own strengths, weaknesses, opportunities and threats, i.e. one must know what they are good at, and try concentrating on that. Many find themselves without various privileges of advanced machinery, access to advanced distribution channels etc., but later realize

they are located closer to the market than most rivals and take advantage of that to cut costs and use the savings as profits. Sometimes, it becomes necessary to change scope and scale of production, or change the production methods to make them competitive. Businesses which understand their limitations are best placed to control costs and survive tougher conditions.

Increased competition

Businesses that operate in the free market economies all over the world know that it is never wise to take customer wishes for granted, despite having periods of enjoying monopolistic power sometimes. When sales start dropping, it is very important to investigate the threat of competitors first. Could it be competition which has taken over the company's market share? Could the competition be manufacturing better, cheaper and more conveniently or are they simply better at marketing?

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There are some goods which are just too basic to live without. The moment the company realises that its basic goods sales are declining, it makes sense to evaluate the competition situation because, obviously, they may not have stopped buying such items but may have changed suppliers. At times the competitor may just be better at marketing and other initiatives that save costs, and competing with them along those lines will only improve the company's proactive and initiative abilities in future. Without a strategy to beat the competition at all levels i.e. raw material sourcing, production and distribution, quality maintenance and pricing, it would be extremely difficult to be profitable.

Changes in market

Participate in any government and community initiatives which can stimulate demand for the business' products if possible. For example, companies selling small business equipment could work closely with the government in promoting youth development and community empowerment drives, which in turn will foster the entrepreneurial spirit among the youths and bring the enthusiasm for growth in small entrepreneurs. This helps in creating the demand itself by making them realise their need for the business' products, using minimum marketing costs, thereby increasing sales beyond the ordinary/usual consumers and resulting in profitability.

Control depreciation costs

Non-financial items like depreciation can always distort the profit situation of a company in the eyes of investors if not taken care of. The nominal profit at face value can be presented factoring out non-financial items by mentioning it separately and making it stand alone in the income statements, or use detailed notes to convince investors that the operating profit is sustainable. Depreciation is nothing but an estimate in most cases, and it is never accurate enough to safely predict the life-span of everything from equipment to buildings etc. Many errors are made in its calculations, resulting in over-stating and understating profits sometimes. The other way to deal with it is outsourcing and selling off useless Plant, Property, and Equipment. This writes depreciation off totally from the books and lives profits from main operating activities untainted.

Sales growth

There is no way we can talk about profit without mentioning sales. The revenue is made through selling to reliable customers. In many cases extending credit is the best way of ensuring consumer commitment towards the business. At the end of the period, credit sales appear in the income statements whether they were collected or not, and this can attract investors, the mere fact of knowing that so much people are familiar with the company's products indicates potential. However, bad debts can be a problem if not recovered in time. Many companies without clear credit policies risk running losses through different types of delays and defaults in payments by their clients. Therefore, making credit sales and encouraging consumers to pay through many various methods can increase sales now and in the future. This minimises risks and losses and reflects well on the profit potential of the company.

Develop a Profit making mission statement and strategy

Every business with the potential for success makes it its first priority to ensure profits by documenting it down in its strategic vision and mission statements. There must be a policy document which can be read by all staff members to ensure and understanding is reached on what profit is, why it is so important and commitment is derived from each member of the team. Many processes to be followed could be adapted/derived from this Profitability strategy and be modified accordingly throughout the different phases of business fluctuations.

Identify key Cost drivers

The wisest thing for prudent managers to do is Conducting cost-benefit analysis exercises to periodically assess the company's cost centres and try keeping the under control. This can be done by identifying key value adding processes and adapting them according to the scale of production and eliminating wastages and non-value adding activities. These cost savings are often transferred to the cost of the final product to make it possible to adjust the prices at will anytime within a reasonable margin of safety.

Staff optimisation

Wage bills are the cause of many headaches for managers across various industries. If a company has inadequate staff, the quality of the work will be low, the speed of the service frustrates customers and even the quantities produced may not be enough to saturate the market… dangerously exposing it to competition since unsatisfied consumers are still left actively searching for another supplier, and when they find it, they are gone for good. If the workers are too much, there will be duplication of unnecessary tasks, it leads to laziness and

conflicts, co-ordination problems, lack of personal development, and promotion prospects which frustrate other development-oriented team members, not to even mention the costs of paying them. It will help to find the right balance between adequate and productive staff. The solution is improving hiring, get experienced and competed workers, and train them to perform effectively. Alternatively, you can also introduce performance-based remuneration and pay them according to performance levels and quality. It saves costs and ensures only costs necessary for production are paid.

Develop quality standards

Quality and reputation of the product in the market will gain the business a lot of popularity. Many companies which are known for taking quality seriously have positioned themselves as such successfully, in the minds of their consumers, and can charge high premium prices for the same item and still beat their competitors. Every brand which associates itself with international quality standards promises and assures its customers of its commitment to continuously improve its products and gins a lot of market favour.

Optimise inventory

Businesses with profitability problems can easily solve them by monitoring how much they are selling and at what pace. If there is always a lot of unsold goods in the middle of the month, it means the consumers have problem budgeting their salaries and that fewer workers and delivery schedules will be required during those periods. Inventories must always be kept an economic minimum, so that they can be handled and sold by the minimum number of staff and supplied in a way that they do not flood the market and force price-drops.

Always know when to take loans

Businesses with a lot of ambition are often seen struggling to break even and make profits due to their timing of financing agreements. Companies hoping to raise additional financing need to make thorough research and compare their perceived profits to the interest expenses associated with such expansion before making any decision. Interest charges have often come back to hurt businesses which were otherwise promising, due to improper timing of the investment decisions. There are times when economies are expanding, where lending rates are lowered to encourage more borrowing which must be taken advantage of, since repayment is lower and the market outlook in the future is usually promising during such periods. There is a danger in borrowing during high rates since they are expensive to pay back and the environment is usually bad during such times.

2.15 LIMITATIONS OF PROFITABILITY RATIOS

Profits are often obliterated by the accrual method in accounting, which specifies that income must be recorded when earned, not necessarily when actually received. Most of the profits are either exaggerated or underestimated because they include amounts actually not received. Some of the amounts shall never be received and will eventually turn bad. A high ratio does not necessarily mean good returns, so the figures need to be combined with a measure of human judgment to apply to particular situations. The reliability of the report will then depend on individual instincts and that exposes the information to many judgment errors.

3 DEBT AND RISK RATIOS

Objectives

In this unit, we will:

- **define solvency and its constituents**
- **explore various solvency ratios and their interpretations**
- **suggest ways of improving solvency and its ratios**
- **consider certain limitations/precautions to bear in mind when dealing with solvency and its metrics.**

3.1 CHAPTER FOCUS:

These are also called Solvency ratios, and their focus is on the ability to survive and maintain the continuity of a business (Investopedia, 2017). As we are going to see, existence and survival issues include the ability to afford paying bills and debts, especially, in the long term. Just to emphasise this, these are "life and death" concerns about the long-term landscape of the business. Everyone among the users of financial ratio information mentioned at the beginning of this book is concerned with whether the business has a chance of surviving in the future, before making any decisions to associate themselves with it.

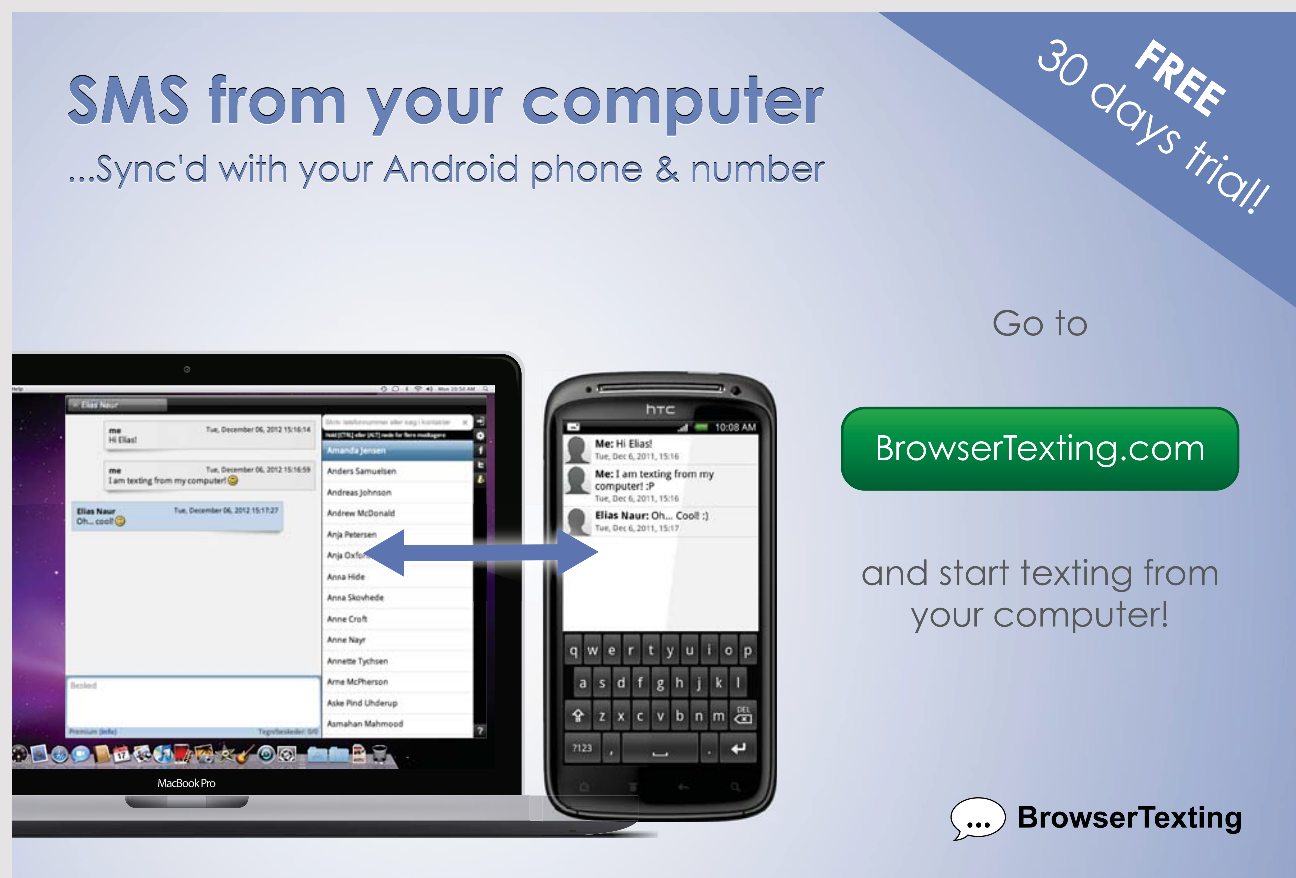
Businesses with a long-term growth focus will attract many investors through many favourable profit and return-on-investment-related activities. Simply put, every business will aim to pay as much dividends and as consistent as possible to attract investment. Companies with high and frequent credit payments are often the market leaders and it is easy for them to raise cash anytime to finance any of their operations since they are always liquid with constant cash injections.

AVAILABLE FINANCIAL RESOURCES - DEBTS = SOLVENCY

Fig 4. The simplified solvency equation (There are many components that fall under the three main areas noted above, depending on the nature of business and size of the organisation). Negative solvency occurs when Debts/ Obligations exceed Available Financial resources while the positive is seen where the Financial Reserves are more than the latter.

Some businesses, in an effort to attract investments, end up becoming reckless and spending too much in, for example, dividend payments, salaries, bonuses and various fringe benefits. While these may appear motivating and good in the short-term, the failure to moderately manage them may stifle the growth ambitions often leave companies in debt. As more dividends are paid to investors, the company has to rely on external debt in order to survive. Obviously, companies that cannot do well in solvency are at risk, from a profit-making perspective. Hence, there are many areas in solvency that stakeholders are interested in; and that is why there is need to accurately measure the strength of the business by analysing its prevailing debt conditions.

Sometimes, though, the majority of investors are concerned with the ratio of the assets compared to the liabilities; i.e. the amount of the organisation's assets belonging/attributable to the shareholders as compared to what is owned by the creditors. Some prefer the situation when shareholders are said to own the majority of the assets, (minimum leveraged) while others would like to see creditors owning the majority of the assets, (maximum leveraging). The former prefer to be in control of everything, while the later always wants to transfer the risk to other parties; it works well where investing in heavy machinery is too risky, too costly and likely to interfere with the core-business. For both, it is often important to always strike the right balance between what is owned by the business and what is borrowed elsewhere, and that is the reason why ratios are important to show the minor details.



It is important, therefore, to fully understand the extent of the risk in the capital composition of a business and that determiners the worthiness of investing in it. How well a business can pay off all its debt if all assets were liquidated gives an accurate picture of whether the business is viable or not. This is used to reveal other underlying metrics like cash-flow, efficiency and can also be an extended method of measuring profitability too. Organisations with lower solvency ratios are much more likely to default on their debt obligations, i.e. If debts are more than assets both currently and in the future.

3.2 THE IMPORTANCE OF CALCULATING SOLVENCY

As mentioned on the outset, it is only those who introspect regularly, who can ensure their future holds better prospects for them. This makes it quite a good practice to check solvency records for various purposes, including control. Management can, thus, understand if there is anything wrong with the company's operating methods and budgeting while preventing bigger errors in future. Granted, many businesses were warned by solvency ratios and they avoided the risky accumulation of more debt, and found better alternatives which ensured their growth. Other businesses realize their good potential through examining their solvency situation; take calculated risks, borrow big amounts of capital, take advantage of well researched market opportunities and grow considerably.

On the other hand, some businesses took advantage of their ability to analyse ratios and identified which businesses to benchmark themselves against in the industry. Since ratios differ from industry to industry, and vary according to the type of industry and size of the company, they help a lot of businesses to compete with companies of almost similar circumstances as them. This healthy competition helps companies optimize their operations, limits risky imitations and fosters a good development culture which can be sustained in the future. Here are examples of solvency ratios/measures commonly used by businesses:

3.3 REPAYMENT CAPACITY

This is the assessment of how well the business can repay long term debt using internal resources. It examines the extent of the company's debt by comparing the available incomes to the outstanding principals and scheduled payment instalments (White, n.d.). When a company's available and projected future incomes exceed the debts owed to financial institutions (including interest expenses), it is deemed to have a higher repayment capacity and, therefore, in a better position to woo investors and financial institutions, since it is an adequate measure of the health and continuity potential of the business.

3.4 DEBT SERVICE COVERAGE RATIO

This one ascertains the strengths to pay debts by comparing net operating income to the amounts owed to creditors (MyAccountingCourse, 2017). It tries to balance the relationship between the incomes being generated by core-business and the amounts owed in long term financing e.g. the principal amounts owed to institutions, credit facility conditions, interest rates etc. It is essential in convincing creditors understand the cash flow of a company and how it will pay its debts in the future. This requires understanding the current debt levels and measures in place to either maintain or improve it in future.

Calculation: Income before taxes + depreciation + interest expense/ Total debt payments + interest E.g.

Given the following information:
Operating Income =8000
Debt instalments =2000

Operating Income/ Debt instalments

DSCR = 8000/2000
=4

(The operating income is 4 times more than the debt commitments, which is good). Companies must just make sure they generate enough profits in order to improve this ratio, and know when to take loans. Limiting the risky financing activities like taking very long-term loans at very high interests, without a clear market offering with potential, can be considered, to avoid having a lower ratio.

A higher ratio indicates that the company can afford to pay its debts while a lower one indicates falling fortunes and a difficult future trading environment. 1:1 is also not quite satisfactory since it means there is only enough revenues to pay the debts if all creditors could one day some knocking at the financial manager's door, all demanding their payments at the same time! When the ratio goes below 1, the company won't be having enough revenue to meet the debts and could be in trouble if the above situations happen.

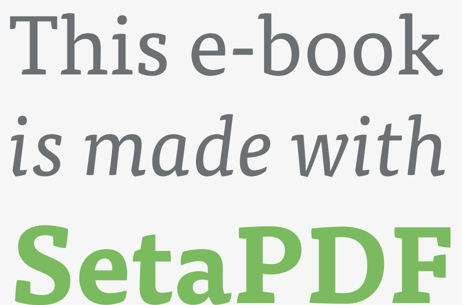
3.5 PROPRIETARY RATIO

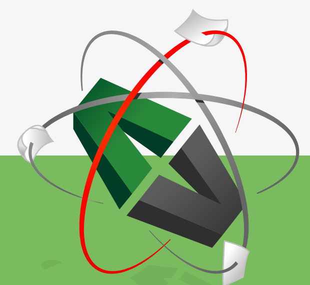
This is the proportion of proprietor's funds included in the total assets of the company (MyAccountingCourse, 2017). It measures the degree of control over the company's assets, and how much of it is in the hands of the shareholders/creditors etc.

Calculation (formula)
=Proprietors funds / (Total Assets)

Share capital	=4000
Surplus/Reserves	=2000
Proprietors' fund	=Share capital + Surplus/Reserves
	=4000+2000
	=6000
Total Assets	=8000
Proprietary ratio	=6000/8000
	=0.75
	=75%

In this case, the shareholders contributed 75% of the assets while the other 25% came from the secondary sources of finance like creditors, lenders etc. This is favourable to most investors, since it indicates that the shareholders are in control, and are in a strong position, since they do not risk losing decision making power to outsiders. Companies must avoid achieving high ratios through buying assets through debt financing. Although literally the assets would have been bought by the shareholders, technically speaking, with the high amounts of loans outstanding, the assets still belong to the lenders of financial assistance





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and could be seized as collateral anytime in the event of defaulting in payments. A low ratio needs to be avoided in most cases since no company would like to cede control to various institutions, and they must be able to operate with or without them. It might be the first signs that it is not generating enough revenue from its own internal operations, prompting management to launch investigations into their operational style for solutions.

3.6 FIXED ASSETS TURNOVER RATIO

This ratio guides on how well employed the fixed assets are used and if they are in their best positions and combinations to bring enough sales revenue. The amount of owner's equity that was spent in purchasing Plant, Property and Equipment is used to provide insight here.

Calculation (formula)
Fixed Assets turnover Ratio = Net Sales/ Net Plant, Property & Equipment

E.g.
Net sales =5000
PPE =10000
Depreciation =1000

Fixed Assets turnover Ratio =5000/(10000-1000)
=5000/9000
=55,6%

Higher ratios are recommended, since they suggest that net sales are more than the equipment required to achieve them. When it is low, declining or even negative, it will be warning management not to continue heavily investing in assets as a solution to increase sales, but find other means of boosting sales shows through, probably, cost saving methods etc.

3.7 CURRENT ASSETS TO SHAREHOLDERS' FUNDS

The ratio establishes the relationship between current assets and shareholder's funds and, as the name suggests, indicates the extent to which proprietors' funds are distributed in the business' stock of current assets.

Calculation:
= ((Current Assets) / Shareholders' funds) *100

Current Assets =2000
Shareholders' fund =6000

Ratio	=(2000/6000) *100
	=0.333 or 33.3%

There is no standard rule for this ratio, since current assets are desirable for other businesses and may indicate under-utilisation of capital in others. It all depends on the industry concerned; e.g. it will be desirable in the construction industry to have heavy machinery plant and land available (fixed and long-term assets), but financial loan providers will desire 'cash and cash equivalents' (current assets) to be more than any other asset they own.

3.8 CAPITAL GEARING RATIO

This is the deep introspection ratio, analysing the capital structure by measuring the relationship between the funds contributed by the owners and the funds borrowed elsewhere, e.g. preference shareholders, bonds etc

Calculation:

Capital gearing ratio	= Ordinary shareholders' equity/Fixed cost bearing funds
E.g.	

Ordinary share capital	=6000
7% Preference shares	=2000
5% Bonds payable	=2500
Capital gearing ratio	=6000/4500
	=4:3

If the capital is composed of ordinary shareholders' equity, it is low geared, and the opposite of this is the high gearing state. Low gearing ratios are favourable, since they mean the company belongs to the shareholders.

3.9 DEBT TO EQUITY RATIO

This is the expression of total liabilities as a fraction of the available shareholder equity. It determines the amount of debt currently owed in relation to the shareholders' equity (MyAccountingCourse, 2017). More debt when compared to the owners' equity can cause some or most of the problems discussed earlier, where only short-term oriented investors remain and long-term visionaries are alienated.

The problem with having impatient investors is the level and frequency of hurried decisions and an unstable environment with many changes that they implement; they show little faith in the business and will be the first to jump ship when they feel their investment is not paying off. Companies require strong, mature and patient leadership, which gives its best and provides stability if they are to survive for as long as possible. The trick is balancing the equation; an absence of debt financing is not that good, since creditors shun an entity for various reasons, most of them negative. Besides, every company needs to spend all of its profits, if possible, in paying dividends and setting aside funds for different reserves. So the only alternative will be to have a certain measure of debt financing in its operations.

Example 1:
Calculation (formula)
D/E ratio =Total liabilities / Total Equity

E.g.
Current liabilities =2000
Long-term liabilities =3000
Total equity =6000

D/E ratio =(2000+3000)/6000
=5000/6000
=83.33%

Lower ratios are recommended, since they mean that shareholders own the majority of the company, while anything higher would be harmful to the entity. A lower ratio, reflecting fewer debts, shows stability and self-reliance; a key indicator that the business has a good market offering and that survival in the long term can be possible.

Example 2:

Formula:

D.E.R = Total liabilities / Total equity

E.g.

Current liabilities =2000
Long term liabilities =4000
Total equity =10000

Debt to equity ratio =2000+4000/10000

=6000/10000

=0.6 or 60%

3.10 TOTAL DEBT TO ASSETS

This is the proportion of all liabilities, whether short or long-term, to the total assets. In simple words, this ratio examines the degree of leverage, or the amount of assets which were provided by creditors and shareholders in a company, at a given time/stage. Many companies with high ratios here tend to cede control, since the majority of decisions rest on what the lenders will say.

Formula: Total Debt */ Total Assets**

*Total debt is the combination of current and long-term liabilities

**Total Assets is the combination of current and fixed assets.

E.g.
Current liabilities =2000
Long term liabilities =4000
Current Assets =3000
Fixed Assets =5000

Ratio =(2000+4000)/(3000+5000)
=6000/8000
=0.75 or 75%

Liabilities are currently worth 75% of the Total Assets

Companies here must keep watching their propensity to borrow, and exercise extreme care when approaching ambitious projects. At the moment, the creditors' clam in the company is growing and very soon, both creditors and owners will hold equal stake, if no improvements are made in terms of reducing the debt.

3.11 INTEREST COVERAGE RATIO

As more and more time passes with an outstanding debt, the accumulated interests keep on increasing until their effects are felt in the cash-flow of the business. This ratio measures the ability to afford making those interest payments in time, before they rise and escalate into uncontrollable debts. It is mostly monitored by banks, which are often concerned about the affordability in technical terms, of the business in paying back the loaned funds. It can be calculated like this:

Formula = Earnings before Interests & Taxes/Interest paid on finance charges

Earnings before Interests Taxes =5000

Interest expense =1500

So:

Interest coverage ratio =5000/1500

=3.33

This business makes 3.33 times more earnings than its current interest payments, which is quite favourable. Generally, it is only ratios lower ratios that are viewed with concern, from a financial stakeholder's perspective, especially if that comes in a declining pattern from the previous periods. It might not be a big problem if previous trends show that is rising steadily. So, companies need to continue watching this figure, managing their debts, controlling costs and maximizing profits, because they do not know when they will find themselves begging for financing at the door of a bank. (Life is unpredictable; you can do everything by the book; contain costs, train staff, implement quality control and safety procedures etc., but still find yourself facing a lawsuit following an employee's mistake, a client or any shocks in the economy which may affect the market's willingness and ability to buy your products. This is the day when most companies realize how important it is to always impress the banks, because everything from the past will be scrutinised.)

3.12 HOW TO IMPROVE SOLVENCY

Form partnerships/joint ventures.

Solvency problems are often signs and indications that the current management structure either lacks the capacity or the vision to keep the business afloat and it could be time to bring fresh brains into the set-up. That is why businesses must always do their best to attract the best potential investors, because during tough debt crisis periods, emergency capital injections are often the best solution to improving cash flow and survival. During recessions and depressions, it is the businesses which have multiple owners which can survive the harsh periods since they have the resources to diversify and spread their risk capital over a wide portfolio and they have additional ways of sourcing emergency funding than one individual (Maguire, 2017).

Lay off some workers

Retrenchments are often the last resort in an effort to save companies from rising debts and spiraling costs. Many businesses realise that the best way to survive would be doing away with certain employees and even entire departments so that they trim unnecessary costs, keeping them at the most economic minimum. They often decide to concentrate on improving the core business only, laying off unproductive and non-value adding services, while improving the retention mechanisms for those who will be left remaining in key strategic positions. Depending on the level of unionisation and some other various forms of external interference in management, when the right employees are retained, only costs proportional to the production scale will be incurred and this will prevent over indebtedness and insolvency.

Apply for judicial management

In an effort to protect the credit consumer and small to medium enterprises, governments have enacted laws that grant temporary relief to businesses struggling to pay their debts. They have an option to approach the courts the moment they sense that they risk losing assets to creditors, and file for partial or complete bankruptcy. The courts can, however, choose to place them under debt administration, where the creditors are consulted and given interdicts to extend their grace periods and halt their demands for a while; allowing the company to recover and pay back later with extra interest and penalties of course. The disadvantage is that the court may choose to appoint a curator, executor or arbitrator to take over the management of the company during the business rescue process. The owners who lose control in this way are not guaranteed that the process will succeed at all in future.

Mechanise production

Mechanising production will reduce costs of production by halving the wage bill. This has proved very helpful especially where workers often resort to strikes and picketing over even the very smallest of issues. Machines will not complain, are not entitled to sick/maternity/vocational leave and other compassionate grounds for absence; so they are there 24/7 to ensure production increases with minimum cost implications. Companies which do not have to pay anyone at the end of the money will raise additional funds to finance debts and loans in this way.

Mergers and takeovers

Some businesses are competitors of each other, complements, suppliers or clients in one way or the other. Co-operation is important between them if they are to achieve their goals, regardless of the differences that exist among them. At times, it becomes necessary for a bread company to buy a wheat farm to control the supply of raw materials in an effort to avoid being bankrupt. At times the same bread company may have to buy a muffin or biscuit maker in order to wrestle the market share from them and keep it under one family brand, i.e. when it notices that too many bread customers now prefer sweeter versions of "bread." The bakery can also buy a supermarket or tuck-shop in order to control distribution channels and reduce the final price of the product and improve sales. All these measures can save businesses from insolvency related problems and are sometimes used as a means to achieve a range of long-term strategic objectives.

Apply for finance

Many businesses which establish themselves very well stand a good chance of accessing financing for various reasons, some of which may not be even related to their own ability to repay the borrowed funds. The effect is seen especially where companies are socially responsible. Imagine there is a mining company which owns a township for its 10 000 workers staying there, which has even attracted many shops/businesses and a commercial bank into the area. The mine has built hospitals, schools etc. and is even in the middle of a dam building exercise with a lot of engineering companies involved. When the mining company goes to the bank asking for a loan to survive insolvency, the bank thinks about the hospitals, workers, engineering companies etc. who work for the mine and owe it money, and then also thinks about the shops that depend on the existence of the money to operate and deposit their trading with the bank. If the bank fails to rescue the mine,

all individuals, hospitals, shops and contractors will be bankrupt, and the bank will be the worst affected. In the end it will do its best to help the mine operate so that the workers, schools, companies and hospitals etc keep doing business with the bank. Many companies have positioned themselves in this way in a quest to survive harsh trading environments.

Re-negotiate debt payment terms

This is where the sound management and qualified strategy makers are required. Competent managers can draft professional and convincing business plans to convince the creditors not to seize assets but grant extensions and grace periods so as to get their money in full. It can save a business from collapse, to know how to negotiate with creditors, offer them collateral and share-schemes to minimise the risks and encourage healthy inflows of financial resources in future.

3.13 LIMITATIONS OF SOLVENCY RATIOS

There are many loopholes that a company needs to be aware of, in implementing solvency ratios in decision making. The problem is that what may be indicating falling fortunes and declining revenues in one industry could be completely fine in another. Having cash and cash equivalents lying around in one company can be considered normal, while heavily investing in plant, property and equipment will be beneficial for other companies. Liabilities, as pointed out earlier, are a sign of strength and weakness at the same time, since attracting them shows financial health and potential, but once acquired, the burden of how to repay them profitably becomes a worrying concern. It is not always easy or possible to arrive at the best decision by measuring the amount of debt alone; since many factors like management practices are poor and the attitudes of creditors cannot be accurately determined except by subjective techniques.

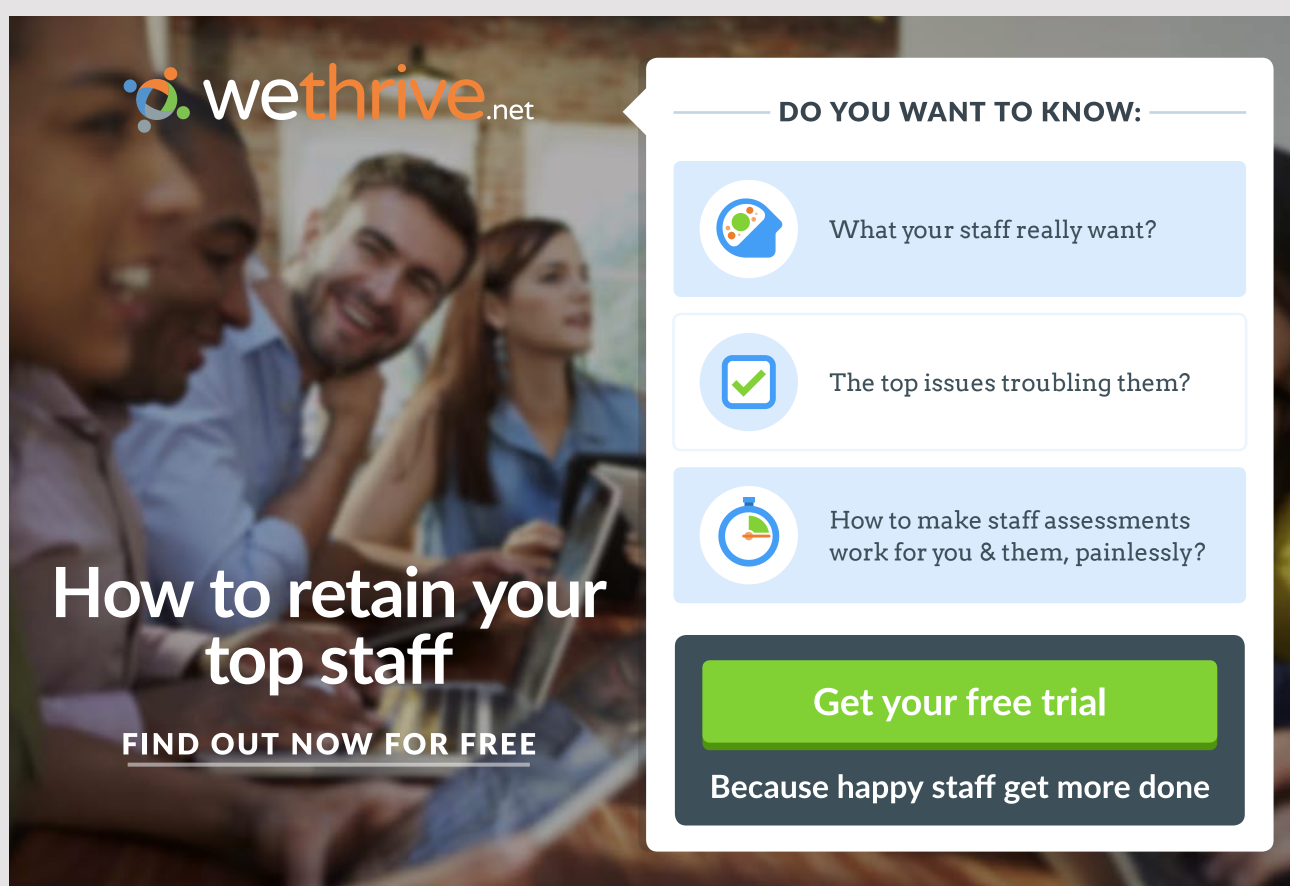
4 LIQUIDITY RATIOS

Objectives

- **In this unit, we will:**
- **define liquidity and its constituents**
- **explore various liquidity ratios and their interpretations**
- **suggest ways of improving liquidity and its ratios**
- **consider certain limitations/precautions to bear in mind when dealing with liquidity and its metrics.**

4.1 CHAPTER FOCUS

Imagine one day meeting two men of different physical stature. One is a very tall, strong and muscular in structure, and can lift weights of up to 400kg! The other one is very short, less than half his size, but very flexible; he can bend his limbs to unnatural angles, such that he can even lick his back with his tongue! When you need help with lifting weights



you would run to the strong man, and there is no trick needed; only known methods are applied there. However, when the task is of a complicated nature, the "rubber-man" would be the best candidate; the only one who can help when non-conventional means are required.

Many benefits can be derived from being flexible, since that enables the above person to achieve even more than the other. A flexible person can scratch himself at the back fairly easier, and faster, while a stiff person needs a lot more resources than that, and the action takes longer to achieve.

Take that and let's put it into a business perspective. We measure a company's flexibility by its ability to reach all corners of its area of influence faster, without desperately requiring any outside assistance. The strength can be shown by a good profitability and solvency structure, but when the business wants to buy raw materials, pay workers, and settle obligations conveniently and fast, liquidity becomes very crucial.

It is that degree of effectiveness we are interested in; the extent of the availability of money or its equivalents in the business, as and when required, to settle debts and obligations. The formal definition, reads as, "the ease with which an individual or company can meet their financial obligations with the liquid assets available to them" (Investopedia, 2017).

AVAILABLE CASH - CASH REQUIRED BY OPERATIONS & CREDITORS = LIQUIDITY

Fig 5. The simplified Liquidity equation (There are many components that fall under the three main areas noted above, depending on the nature of business and size of the organisation). Negative Liquidity occurs when Cash Required by Operations and Creditors exceeds Available Cash while the positive is seen where former is more than the latter.

Cash is the most important measure and standard for liquidity. Everyone with cash finds it pretty easier to buy anything they want because there are no negotiations necessary. We can say cash 'un-complicates' most trading situations and is always readily acceptable even when used in exchange for invisible items. It is also relatively less complicated as well to convert certain shares/securities, accounts receivable and current inventory to the much-needed cash and these can also be relied upon to raise liquidity levels in the short term.

Anything that is not cash, always meets with a lot of resistance before it can be accepted, that is, if it can be accepted at all. It will all depend on how close the item is to being convertible to cash; so the harder it is to sell, the difficult that transaction is going to be. For example, a wheat farmer sells wheat to a baker. The baker cannot pay him in cash after converting all the wheat into bread, and he offers to pay the farmer in bread equivalent to his wheat in value. There are many factors the farmer now has to consider the following factors:

1) Does he have a place where to market the bread in order to get his money?
2) Does he have enough handling and warehousing equipment to preserve the bread and sell it before it reaches its perishability?
3) Does he have enough workers to sell the bread?
4. Who will handle the promotional aspects and meet the additional expenses of selling all this bread before the farmer can get his 'wheat' money back?

After careful consideration, the farmer in this case will have to decline that payment and demand money or anything like it. We can then say the bakery is not liquid enough, and it must have the money to pay its creditor, or else the creditor will take stronger action to demand his payment.

Any asset other than money or its equivalents needs to meet some 'qualifying criteria' before it can be accepted as payment for goods and services. It is understood that in some services, the creditor may not mind receiving payments in other forms of assets, but it is rarely so, and often co-incidental in nature, e.g. The baker we talked about, having borrowed the wheat from the farmer; upon failure to pay, suppose the farmer realises he could accept payment in bread since he also has a chain of supermarkets which could use the stock! In this case, the inventories have played the perfect liquidity part, but how often do we deal with a creditor who triples up as a competitor and a consumer at the same time? A creditor from whom we can borrow capital, and to whom we can sell the finished goods, only having to exchange 2 commodities in the process, i.e. The baker buys wheat, makes bread and sells to the same wheat maker who will pay back in wheat or by writing off the previous wheat debt?

The above model might seem exciting for some, but it needs rocket science, luck and relies on a series of unexplained natural phenomena, which can never be relied upon in business.

So, every business needs its own adequate amount of liquid reserves in cash, securities, inventories, current assets and securities, which could all be converted into cash within a reasonable time, to pay debts, meet obligations in time and avoid sequestration. Liquidity enhances the reputation of an institution before its suppliers, creditors and other stakeholders, since it maintains a continuous flow of uninterrupted operations, and makes it more reliable. This will bring trust and loyalty to the company's internal and external environments, and ensures its long-term survival.

The following ratios are all concerned with the ability to pay expenses within a short period. Liquidity ratios measure a company's ability to pay short-term obligations of one year or less (i.e., how quickly assets can be turned into cash). An abnormally high liquidity ratio indicates that a business is holding too much cash that could be utilized in other areas. A low liquidity ratio means a firm may struggle to pay short-term obligations, suggesting that there must be an accurate balance between both extremes for the efficiency to be realised.

4.2 SIGNS OF LIQUIDITY PROBLEMS

Unlike other metrics like Profit, that are best measured at the end of trading periods, liquidity is a continuous process and is greatly affected by the prevailing situation. The better liquidity levels experienced in the past have no bearing on the present situation, and it does not benefit the company enough, to be satisfied with that the liquidity may improve in the future, because the company may not survive into that future period if current liquidity is not good. This means a sustained period of liquidity difficulties is very bad, since it will lead to even more liquidity problems in future.

Therefore, a company with a small debt now needs to settle it now before the debt accumulates more interest, results in lawsuits, unfulfilled contracts and even blacklisting by some creditors and financial institutions. This all means that liquidity is an on-going metric which needs to be measured daily, weekly or frequently and the following are often good signs to tell if action needs to be taken to correct the liquidity of a company:

- Declining cashflow
- Late deliveries
- Late payment of suppliers
- Over-reliance on future sources of funding
- Increasing levels of external debt;
- Decrease in cash or cash equivalents;
- Depletion of investments and fixed assets, etc
- Shareholders often required providing more cash injections
- Increases in non-operating liabilities.

Businesses that rely too much on funding that falls outside their operational scope will realise how much trouble that is sooner or later. This could be a wakeup call, to overhaul the business's pricing and profit models and consider improving the core-business and make it the main source of funding, and let external funding remain as secondary sources.

4.3 LIQUIDITY RATIOS

4.3.1 CURRENT RATIO

This ratio helps us imagine what the situation would be like if the company would one day be forced to use all its current assets to pay the current liabilities, and see if it would survive or not. This is done to measure the ability to meet short-term debts with the resources normally available during the operational operations, namely, the trading stock and other smaller assets.

Formula: Current Assets/Current liabilities
Eg

Total Current Assets	=2000
Total Current Liabiliies	=1000
Curent Ratio	=2000/1000
	=2:1 (Your assets are double the amount of liabilities)

A ratio of 1:1 means there are equal assets and liabilities, meaning, should creditors all demand their payments at once, the business will be left with nothing. A higher ratio (above 1:1) is more favourable than a lower one, since it means there are more current assets than debts, and that the company's in a position to pay its dues more conveniently. Lower ratios (below 1), indicate that the company will struggle to pay its short-term debts. Too high a ratio, though, suggests that the company has a lot of underused current assets lying around, which could be used in expanding operations and earning more returns in the future.

This ratio can be improved through increasing the current assets and reducing the current liabilities Generally, an increase in profit often leads to an increase in cash and cash equivalents and avails money to settle obligations, but also disposing of unproductive assets and avoid forms if financing that increase current liabilities will be advisable.

4.3.2 ACID TEST/ QUICK RATIO

This ratio is concerned with the ease with which the business can pay its current liabilities using its quick assets, namely, those that are convertible to cash within 90 days or less i.e. They include the actual Cash, its equivalents, current accounts receivable and various marketable/semi-liquid investments (Accounting-Simplified, 2017). This measure, unlike the current ratio, eliminates the inventories and other less liquid current assets, which, although they may not take time to dispose, their market value will be hard to ascertain (as explained in the wheat farmer example earlier). It is inconvenient to sell inventories and other current assets in a hurry, meaning that sometimes they will be sold at desperate prices and give-aways, making this financing method very unreliable.

Formula (Calculation)
Quick ratio = *Quick current assets/ Current liabilities
*Quick current assets are found by subtracting Inventories from the Current assets

Given the following information:

Current Assets = 7000

Inventory = 2000

Current liabilities =4000

Quick ratio = 7000-2000/4000

=5000/4000

=1.25

Higher quick ratios are more favourable since they assure of the presence of more quick assets. This is a good sign for investors, and creditors; those who want cash to be around to meet what is owed to them; but it can be a bad sign for those who are really interested in the growth of the company, because the over-prudent approach means more funds which could otherwise have been invested in future growth activities, remain tied up, waiting for an investor to come and claim his share or some creditor to demand payment. Management must approach this area in a way that does not dampen their growth prospects.

4.4 DOUBTFUL DEBT PERCENTAGE

A doubtful debt is an amount owed to a company by a debtor, which later becomes impossible to recover. This ratio represents the credit sales that can no longer be paid back due to defaults, death, bankruptcy, and a variety of reasons. It can be expressed as a percentage of cash sales, credit sales or total sales, depending on which specific area might be worrying management the most. Since bad debts later on 'reverse' the sales figures reported in the income statements and ultimately reduce the overall profit, companies will fight to keep them at their lowest possible values.

We can use either of the following formulas:

(i) (Doubtful debts/Net sales)*100
(ii) (Doubtful debts/Credit sales)*100
(iii) (Doubtful debts/Total sales)*100

A smaller number will mean the numerator (bad debts) is smaller and, therefore, favourable, while a higher percentage will mean the likelihood of many defaulters and that will be extremely bad if expressed as a proportion of the total sales.

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4.5 COLLECTIONS PERCENTAGE OF NET REVENUE

Because of the accrual accounting convention, which encourages accountants to record incomes when earned, it is possible for Income statements to report 'inflated' revenue/sales figures, since not all revenues need to be necessarily collected before reporting. This figure seeks to establish that percentage of Net Revenue that is actually collected by the end of the current year, to give a more realistic understanding of the actual sales achieved. It is highly recommended to collect as much cash as possible, including other debts that may have been declared unrecoverable in recent financial years.
It is calculated this way:
(Sales Collected from debtors/Net revenue)*100

Amounts less than one mean there is a percentage that went unrecovered and will call for additional measures. All in all, higher amounts are favourable sine they mean more was recovered and the debtors' policy is effective.

4.6 DAYS CASH ON HAND

Since cash is the most important measure of liquidity, it is hard to even consider operating a business without it on hand. This ratio, though, helps us imagine how long the business could last without cash, by focusing on the current reserves and the projected trends. Generally, higher ratios here show good financial management; since most stakeholders like financial lenders, employees, investors rely on the availability of cash to meet their own objectives.

4.7 DAYS IN ACCOUNTS RECEIVABLE

It is almost unavoidable nowadays to operate without selling some of the merchandise on credit, as more and more entities opt to reduce their reliance on cash for everything. This ratio seeks to estimate the average number of days after a purchase, in which receivable amounts are tied up in unpaid accounts, etc. As can be expected, the faster and more convenient payments are more favourable, so the Lower the values are, the better.

4.8 AVERAGE PAYMENT PERIOD

There will always be different creditors of varying circumstances in the business. It is not only important to pay all credit purchases, but the timing of such payments also determines if enough cash will be available for the company as and when required and contributes to the success of its operations. This ratio focuses on the time the business takes to settle all outstanding current liabilities. Some creditors demand payments more regularly and at very awkward moments. It will be desirable to deal with suppliers that are patient, reasonable and reliable all the time; therefore, the lower these values are, the better.

4.9 INVENTORY TURNOVER RATIO

Many companies aim to sell their entire inventory within a short period of time, e.g., businesses, which take years to complete the entire stock, will find it difficult to use their stock as collateral in banks, because it is highly unlikely that the banks will get their money back in time (Study.com, 2017). This ratio shows the number of times inventory is sold during a period under review/ how long it takes a company to sell its average inventory during a trading season. There are many businesses with low profit margins and surviving on selling stock many times that could benefit from higher ratios.

Formula = Cost of goods sold / 0.5 x (Opening inventory + Closing inventory)

E.g.

Cost of goods sold =5000

Opening inventory =1000

Closing inventory =2000

Stock/Inventory turnover =5000/0.5(1000+2000)

=5000/1500

=3.33

Lower ratios could be indicating signs of problems, among others, overstocking, poor marketing efforts, product obsolescence, overpricing or even declining demand. They call for the company to investigate if the competition is performing better and quickly find

ways to ensure smoother ways of operating are implemented .A balance needs to be struck here, since even high turnover can be a sign of too low inventory levels and a failure to saturate the market with the company's products, which could be opening a window for competitors to penetrate and cause problems.

Example 2:

Sales / Average Inventory

E.g.

Opening inventory	=2000
Closing inventory	=3000
Sales	=5000

Inventory turnover	=5000/0.5(2000+3000)
	=5000/2500
	=2

The quicker the inventory is sold, the better.

4.10 WORKING CAPITAL TO SALES

This is the ability to 'use the working capital to achieve a desired level of sales without incurring additional debt' (Business Dictionary, 2017). A high turnover ratio indicates efficiency in using a company's current assets and current liabilities in maintaining a smooth flowing and healthy sales level.

Formula: Working Capital (Current Assets minus Current Liabilities) / Total Sales
E.g.

Current liabilities =2000
Current assets =3000
Sales =5000

Working Capital to Sales ratio = (3000-2000)/5000
=1000/5000
=0.2

It is desirable to achieve more sales using smaller levels of working capital. It is also quite desirable to know how much working capital is required to achieve the desired levels of sales, since the availability of working capital assures the company that it will be able to raise capital from within its operations, to expand operations, survive and grow in the long run.

4.11 DAYS SALES OUTSTANDING RATIO

This is how well a company can collect cash from its customers (MyAccountingCourse, 2017). When credit sales are received in time and in full, the company saves a lot in collection costs and can use the funds to pay for its operations before inflation and other changes affect the value of the money. Depending on the size of the debt owed by the clients, delayed collections tend to force the company to buy in credit from suppliers, incurring interests and missing discounts and incentives that could be derived from prompt payments. Lower ratios here are preferred, since they increase both the liquidity and cash flows of the organisation.

Formula = (Closing Receivables/Total credit sales) * 365

E.g.

Closing Accounts receivable =5000

Total credit sales =10000

DSO Ratio = (5000/10000)*365

=0.5*365

=182.5 days

It would be favourable to collect sales faster and keep this number as low as possible, as longer collection periods often indicate late payments, lower operating incomes and increased default-in-payment risks. Since sales in the Income statement often include a large amount of uncollected accounts receivables, it is only after presenting its collection schedules that a company can convince creditors to give it funding. If this ratio is not favourable, the sales figures in the income statements will be misleading, since the company's "real" sales/profit figures can only be measured in physical quantities, using tis metric.

A lower ratio, as mentioned above, is more favourable because it means lower bad debts, quicker collections and ever-available cash and cash equivalents. A higher ratio means the opposite; slow collection, cash shortage, unreliable customers, and falling market share and bankruptcy threats.

4.12 DAYS SALES IN INVENTORY

This simply means the amount of time it takes to sell all the inventory/stock over a determined period (MyAccountingCourse, 2017). It is used to measure many things such as the demand of the company's products, their usage rates in households and businesses (e.g. basic goods will be expected to sell faster than luxuries) and how effective the company's selling and distribution efforts are. Some companies even use it in determining their pricing methods too. There is often need for fresh to replace older and obsolete inventory in order to earn higher turnovers and increase profitability

Formula = (ending inventory/cost of sales) *365

E.g.

Cost of Sales = 20000

Ending inventory = 4000

DSI Ratio = (4000/20000)*365

=73 days

Managers prefer to see inventory turning over more frequently to keep costs lower while increasing the cash flow situation. When inventories are kept for too long, additional costs and risks arise including thefts, obsolete stock, insurance, and warehousing costs. The ability to achieve shorter inventory holding days is a good liquidity measure and it is very attractive especially in the retail and perishables industry and to the companies that have lower mark-up margins on their prices.

4.13 CASH RATIO

An improvement from the current ratio, this one shows the possibility to meet all current liabilities with the readily-available cash and cash equivalents at its disposal, providing an even stricter approach to liquidity than the acid test and current ratio.

Formula = Cash equivalents/current liabilities.

E.g.

Cash =2000

Cheques uncleared =1000

Deposits Uncleared =1000

Current liabilities =4000

Cash or cash coverage ratio = (2000+1000+1000)/4000

=1

This company has a ratio of 1 suggesting that the amount of cash and equivalents is equivalent to its current liabilities. If the ratio was above 1, it would mean that the company can afford to settle all its debts with the available cash and cash equivalents and still afford to take additional debt in future. All companies must fight keep it above 1, and avoid the potential trouble which can arise when creditors suddenly change their terms and require urgent payments; many companies lose their assets in this way if they are not pro-active.

4.14 HOW TO IMRPOVE LIQUIDITY

Widen investment portfolio

There are so many banks that run some investment schemes where companies guarantee to maintain certain levels of fixed deposit in exchange for assurance of getting loans up to certain predetermined amounts. These amounts can be negotiated upon, as to how long they will stay in the bank and how much interest they will earn. A useful feature is leaving an open clause that allows the company to withdraw some of the principal amount when it reaches below minimum agreed liquidity levels. It often helps to plan ahead and prepare plans to tackle liquidity problems even before they occur.

Forensic Cost audits

It is wise to always take stock of the costs and components that make up the various cost categories to see if there are improvements which could be made. Many organisations which identify costs components which are above 20% of their total costs, have successfully implemented mechanisms to monitor them and remove the elements amongst them which drove them up. For example, a company realises that its labour bill is more than 35% of its total costs and makes it a priority to monitor it. While investigating, it realises that the two biggest contributors are the Plant Foreman the Manager and Supervisor who earn 50% of that 35%. The next thing is to see which tasks are being duplicated and it is determined that the foreman and supervisor can be released and everyone reports to the manager. This results in availing 30% of that 35% for other financing purposes. Therefore, keeping a register of costs and investigating their cause and effect relationships will ensure improved liquidity in future.

Unproductive assets

The current ratio discussed earlier in this chapter warned that companies must only keep the assets they need at that time; or else they will maintain equipment they are not using, and start incurring costs that are unrelated to current production, resulting liquidity problems. Investments in heavy machinery just lying around will make it difficult to raise emergency financing when current cash and cash equivalents fail to meet on-going obligations. It is better to sell old inventory, and auction off used equipment and invest the money in reputable finance houses or avail it to top-up current operations. This could help businesses to borrow money in future with some virtual form of collateral (Newman, 2017).

Accounts receivable:

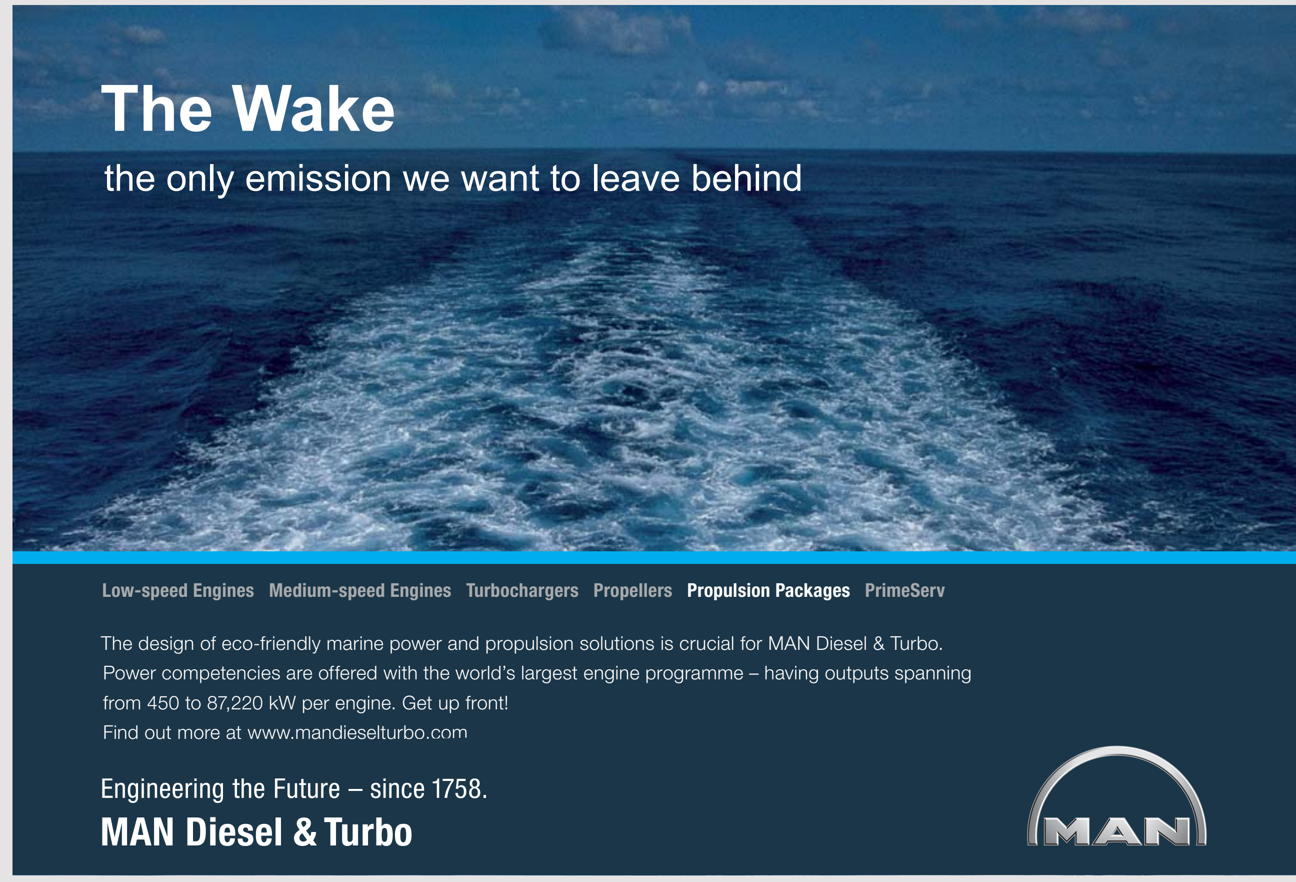
These are amounts owed to the business by clients after conducting credit sales. These receivables can make the income statement look good since revenue has already been "earned" although not yet "received" in actual terms. If these are not monitored properly, they may eventually change to bad debts, resulting in large losses, especially in industries where credit sales are unavoidable, i.e. bond house sales and motor vehicles markets.

It is important to have a clear credit sales policy, and modify it accordingly as time goes on and with each change in circumstances. Companies with clear guidelines on how they treat their debtors stand a good chance of collecting all their receivables. Granting discounts can encourage faster payments and prevent defaulting. Major clients, though, need more leniency and to be treated with discretion. Businesses must make it clear that debtors stand to gain a lot from paying their accounts in time by submitting their bills to customers as quickly as possible. This in future will ensure revenues are available for expansion as and when required.

Accounts payable:

The kind of people that the company does business with can determine its success or failure. Businesses need to find creditors who are open, lenient and understanding. Sometimes the window of opportunity requiring emergency financing can be very short, and the loan could be repaid back within a reasonably shorter timeframe. The companies can use the deferred payments to creditors to finance their ventures.

Imagine there is a good deal which could be struck with an important supplier, maybe it's an opportunity to get a whole 6 months' supply of vital raw materials for the price of only one moths' supply, on condition that the amount is paid in cash. It will take some lenient creditors to allow the company to use the payments due to them, to finance its own activities and pay them later. There must be trust between a company and its creditors, which makes it possible to agree to long-term loans and longer payment plans. Companies can do a lot with the delayed payments in the meantime.



Financial discipline

Entrepreneurs and business owners need to have a long-term focus and keep their business first ahead of their own interests. Before the owner thinks about his personal amusement needs, he must ensure there is enough money for the future of the business, maybe for two or at least three trading seasons in advance so as to monitor any potential problems in time. There must always be various reserve amounts, each waiting for its own contingencies.

Companies which maintain an Asset Replacement reserve fund, Capital redemption reserve, Bad debt financing reserve, Compensation of Workers Fund, Retained earnings for Expansion and various reserves earn lots of interest income and a good reputation before banks, which helps them prepare better for natural disasters, strikes affecting production and even changes in the overall economic environment. Owners must guard against reckless drawings and focus on the future prospects of the business. This ensures some reasonable amounts will always be available in the bank in case of problems.

Profitability:

Profits are the best guarantee for future liquidity. Profits ensure there is money to pay expenses, fixed and variable. The more profits businesses make, the easier it becomes to meet even unforeseen costs. Therefore, higher gross and net profits are required. Profit can be achieved by (1) increasing prices of products (if it will not lead to a market boycott), (2) reducing costs and (3) using lower grade raw materials to make the same product (provided it does not affect the overall product quality). Aggressive marketing and expansion of the distribution networks could also increase sales and profit margins without major changes to the plant and processes. The result will be more funds available for other uses to.

Limit risky investments

Many investment projects are decided upon, merely by majority vote, sometimes overlooking the need for thorough feasibility studies. Businesses must always thoroughly evaluate the projects they decide to invest in, and try to establish how long it will take before they break even and actually start bringing liquid cash in. A useful tool is maintaining the cash flow register, which shows how much cash comes and leaves the business. This will establish the trend behind the cash flow and quickly pinpoint areas for improvement.

4.15 LIMITATIONS OF LIQUIDITY RATIOS

Liquidity is never static, but is often an on-going measure, which fluctuates over time. The current year liquidity cannot be accurately used to forecast the following year's liquidity and vice-versa (Peavler, 2017). Liquidity's importance varies between industries; it can be crucial for a retailer but not that much for a game farmer who relies on natural elements to operate. There is little that a company can do to convince outside investors to grant emergency funding as and when required. It will always be at the discretion of the bank or financial institution, whether to associate themselves with the company or not, despite having maintained a good financial reputation. We may do everything by the book but never be guaranteed to force investors to pour in their capital. There must always be a balance between internal and external forms of support for the business to succeed, and it will

5 EFFICIENCY RATIOS

Objectives

In this unit, we will:

- define efficiency and its constituents
- explore various efficiency ratios and their interpretations
- suggest ways of improving efficiency and its ratios
- consider certain limitations/precautions to bear in mind when dealing with efficiency and its metrics.

5.1 CHAPTER FOCUS

Success in business is derived through giving less and gaining more; effectively, businesses intend to produce more using fewer resources (Investopedia, 2017). Financial efficiency ratios look at the time and costs it takes companies to achieve a certain level of income and seek to minimise these. These ratios are important for management to monitor the company's fortune on an on-going basis and that equips them with adequate resources; resources that will help them achieve profitability, more liquidity and, eventually, solvency.

Nowadays, it is not the size or scope or scale of operations that determines the success of the business, but it is the wisdom of transforming **what is available and working magic with it**. We now need fuel-efficient cars these days; cars which can travel even longer, faster and friendlier to the environment for a fraction of what we used to spend before. In fact, the greatest companies like Apple, Microsoft and Wal-Mart, pride themselves in employing fewer personnel and controlling overheads, and that is the secret of success in contemporary business management.

INPUTS - OUTPUT = EFFICIENCY

Fig. 6. The simplified Efficiency equation (There are many components that fall under the three main areas noted above, depending on the nature of business and size of the organisation). Negative Efficiency occurs when the Inputs side exceeds/are relatively and proportionally higher than Outputs while the positive is seen where former is more than the latter.

It is always good to bargain better, budget better and always keep increasing returns without having a corresponding increase in the costs necessary for the realisation of higher levels of output. Companies need to be on the lookout, and always compare the inputs to their output and ensure that the latter is proportionally larger than the former.

Importantly, profit, too, nowadays, is measured best using the ability to control costs. Businesses may have high profit margins but still find it hard to convince investors to buy into them, because the ever increasing costs make the future unpredictable. There are a lot of implicit opportunity costs which are incurred every time costs increase. The business would have to improve a lot on financial efficiency and use its assets to generate more revenues; and the best place to start is cost control. There is a constant need to avoid spending more than necessary on non-value adding activities in the production process.

5.2 SIGNS OF EFFICIENCY PROBLEMS

- Increase in thefts, redundant stock and breakages
- Ballooning wage bill
- Rising production and distribution costs
- Increased inventory holding and warehousing costs
- Ever-improving competitors
- Loss of market share
- Aging equipment and increasing maintenance costs
- Increase in non-operating expenses
- Frequency of pressure from workers and suppliers
- Increasing overall expenses, overhead costs, administrative, marketing/advertising costs
- Increase in unplanned expenditures, etc.

Each of the above elements needs to be investigated independently, after which its overall contribution to the decline in profitability and growth must be measured. It is in the best interest of the business, to know if the staff is dishonest or de-motivated and try to address those problems to ensure the company resources are not stolen or vandalised.

The wage bill, for example, can help realise if the problem is having too much workers or too much salaries. With that in mind, production costs and inventory can be kept at an economic minimum and kept in touch with the standards offered by competition. When the company realises the competition is producing better, cheaper and more easily available versions of the same product as its own, it might be time to investigate what can be done to keep up, and avoid losing the market share. In the long run, aging equipment will have to be replaced, but without efficiency ratios, the company realises this too late and cannot effectively implement the replacement smoothly over a longer period of time. All these and others contribute to emergency spending which creates uncertainties and instabilities. This makes it obvious that there is always a good reason to improve efficiency at all times.

5.3 EFFICIENCY RATIOS

5.3.1 ACCOUNTS RECEIVABLE TURNOVER

This ratio shows how fast it is to generate revenue from the collection of credit sales from customers (MyAccountingCourse, 2017). It can also show how reliable the customers are and indicate to management if it can rely on credit sales as a source of emergency funding. Many companies use this ratio to review and evaluate their credit policies to reduce losses and improve their liquidity as well.

Accounts Receivable Turnover = Revenue / (Average Accounts Receivable)

E.g.

Revenue from credit sales	=20000
Average accounts receivable	=10000
Accounts Receivable turnover	=20000/10000
	=2

When it is too low, it suggests a weak debt collection schedule, while a high turnover is recommended.

5.3.2 INVENTORY TURNOVER

This has been discussed in the previous chapter but it also applies here as well. As the company continues growing, there will be need to ensure more inventories are sold using the same amounts of resources. The only problem is that inventories come with costs, warehousing, breakages, exposure to dangers etc., and can require more funds to sell and administer. This ratio analyses the ability/speed to utilise inventories in earning revenues without raising too many costs (Study.com, 2017).

Formula:

Inventory Turnover = (Cost of Goods sold) / (Average Inventory)

E.g.

Cost of goods sold =6000

Average Inventory* =2000

Inventory turnover ratio =6000/2000

=3

*Average inventory = (Opening + Closing inventory)/2

It is advisable to have more cost of sales as compared to inventory, or simply put; to generate more sales using fewer inventories. The company needs to avoid lower ratios which suggest that there is more inventory than cost of sales, suggesting that inventory is piling up. Higher ratios mean the business can save by selling its stock faster, cheaper and more effectively.

5.3.3 ACCOUNTS PAYABLE TURNOVER

This ratio ascertains the ease of raising financial resources through the credit-payment process (MyAccountingCourse, 2017). Too high a ratio calls for the review of the supply chain activities since creditors are deemed not lenient enough on the business and that could spell even more trouble in the future.

Formula = (Cost of Gods purchased) / (Average Accounts Payable)

E.g.

Cost of purchases	=6000
Average Accounts Payable	=3000
Accounts Payable Turnover	=6000/2000
	=2

5.4 OPERATING EXPENSE RATIO

This one helps policy makers in understanding just how much of revenues are generated using the current levels of operating expenses. It measures the amount of operating expenses incurred in maintaining a certain level of revenue. This helps the management in cost-cutting and ensuring that only necessary expenses are incurred, in order to improve profitability.

Formula	= (Op. Expenses)/ (Total revenue)
Operating expenses	=2000
Total Revenue	=4000
Operating expenses ratio	= 2000/4000
	=0.5

It will be desirable to have more incomes/revenues (denominator) with lesser amounts of expenses (numerator). This means lower ratios are attractive.

5.5 OPERATING EXPENSES TO SALES

Many companies desire to increase sales, in order to grow, but there is always an undesirable factor; that of increasing costs to achieve a certain level of sales. This dilemma of how to increase sales/profits without increasing costs can be measured using this ratio. It is important to measure how much costs are required to achieve the desired level of sales and profits.

Formula: Operating Expenses / Total Sales

E.g.

Operating expenses	=2500
Total sales	=5000
Operating Expenses to Sales ratio	=2500/5000
	=0.5

The company spends 2500 in expenses in order to achieve $5000 sales. The ratio must continue decreasing in order to be favourable, since its increase suggests the rise in expenses and decrease in incomes, which will not be favourable in the long run. The idea is how much capable the company is, in making profit without increasing costs.

5.6 DEBTORS/RECEIVABLES TURNOVER RATIO

We have already mentioned how unavoidable it is to operate without credit sales and the disadvantages often associated with granting credit. Because accounts receivable are debts owed without interest and can be easily lost, a firm must do whatever it takes to recover the income. This ratio analyses the efficiency of the business' debt collection efforts and their contribution to the overall liquidity and efficiency of operations.

A high ratio indicates very efficient debt collection procedures while a low ratio can mean poorly organised collecting processes, a bad credit policy or struggling customers. This often calls for the review of debt policies to ensure the customers pay on time and limit risky credit sales.

Calculation (formula)

Credit sales/Average Debtor amounts

Accounts Receivables / Average Daily Sales

E.g.

Credit sales	=3000
Average Debtor amounts	=500
Debtors Turnover ratio	=3000/500
	=6

5.7 FIXED ASSETS TURNOVER RATIO

This ratio of sales to value of fixed assets, indicating shows how effective the business is at using fixed assets to generate sales. The company needs to monitor depreciation which reduces the value of fixed assets, to always ensure enough sales are generated at low costs.

Calculation (formula)

Sales / Net Fixed Assets

E.g.

Sales	=2000
Depreciation	=500
Fixed Assets	=4500
Fixed-asset turnover ratio	=2000/(4500-500)
	=2000/4000
	=0.5

Higher ratios are caused by an increase in sales and a decrease in net assets, which is favourable, since the business has/is moderately invested in fixed assets and does not have too much plant, property and equipment. When the figure is low, however, it means sales/revenues are lower than the fixed assets and the opposite will be preferred since it means the company can generate more revenue using fewer assets. The lower the ratio, the heavily invested the company is, in fixed assets.

5.8 TOTAL ASSETS TURNOVER RATIO

This ratio measures the ability to generate sales from its assets by comparing net sales with average total assets or the cost-reduction capabilities of the business' assets (both fixed and current) in generating its sales (Accounting-Simplified, 2017). Higher turnover ratios mean the company is using its assets more efficiently.

Formula:

= (Sales) / (0.5* (Fixed Assets + Current Assets)

Example:

Revenue/Sales	=30000
Fixed Assets	=15000
Current Assets	=15000
Average Total Assets	=15000

Total Assets turnover **=30000/15000**

=2 (Every unit of assets generates twice as much in sales).

We all desire to see a higher level of sales coming from a lower level of assets, meaning that the numerator here must be much bigger than the denominator. Higher ratios mean that more sales are being generated using fewer assets, while lower ratios indicate too much costs required to achieve lower sales. Investors can be best attracted by maintaining higher figures and avoiding lower measures. . When assets exceed the sales, it shows that the business is struggling, using too many assets to achieve very little and vice-versa.

5.9 TOTAL ASSETS TO SALES

This is the reverse of the Asset turnover ratio above since it compares assets to sales

Formula: Total Assets / Total Sales

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Total Assets to Sales =20000/5000

=4

This one must be as low as possible, to indicate higher amounts of sales as compared to the assets required achieving them.

5.10 LABOR TO NET SALES RATIO:

Labor is often the biggest expense component in many businesses, often averaging up to 80% of the total budgets. It is a favourable thing to reduce expenses like labor and make sure the staff is kept at the lowest minimum and effective in maximising the revenue earned.

Formula:

Wage bill (salaries plus fringe benefits) / Net Sales

E.g.

Fringe benefits =500

Direct labour =2500

Indirect labour =1000

Sales =6000

Labor to Net Sales Ratio =2500+1000+500/6000

=4000/6000

=0.67 or 67%

Higher ratios mean that labor (as the numerator) is higher than the sales (the denominator, while lower figures represent the opposite. Companies need to avoid higher ratios and make sure sales always exceed the labor by very high margins. The lower, the better.

5.11 ACCOUNTS PAYABLE TURNOVER RATIO

This one shows just how many times a company pays its suppliers.

Formula		= Total Purchases/Average Accounts Payable
E.g.	Total purchases	=3000
	Average payables	=2000
A/P turnover ratio		=3000/2000
		=1.5

5.12 HOW TO IMPROVE EFFICIENCY

There are many ways of improving efficiency, which include, among others, outsourcing, restructuring operations, workforce and implementing various intelligent cost-cutting measures (Tweedle, 2017).

Green technology

Using recycled materials and other environmentally friendly production methods has proved to be the driving force behind the success of modern industries. There is always a lot to be gained when waste materials are reused. These raw materials are cheap if not free in most cases, greatly reducing operating costs. There are many companies which saved costs by using cheaper packaging which could also be used in promoting their products at the same time. Many companies which have opted to use raw ethanol in place of petrol save costs, have a hybrid fuel which has proved to be very efficient and that environmental friendliness will earn them government sympathy in future.

Machines replacing humans

The human resources budget has a way of dominating overall total costs, to the extent of contributing up to 80% of them. In many democratic states, labour is unionised and protected by the governments in an effort to safeguard the human rights of citizens. Machines and robots have, on the other hand, proved to be twice as competent as humans, have no rights, they

do not get sick/tired, and can be programmed and forced to reach required targets without any backlash from anyone. Companies with more machines have low production costs, higher productivity and better profit margins. It is not 100% advisable to aggressively implement this policy since it sometimes goes against macro-economic goals of increasing employment, and companies that breach it could land themselves in serious trouble with the governments.

Seasonal employment

It is always good to carry out forensic human resources audits before deciding to employ workers. This ensures that the right number of workers are acquired and kept, so that they are evenly spread over the available workload. Sometimes workers need to be employed during peak labor demand periods and be laid off when production falls. Seasonal employees have the drive and enthusiasm to impress, and are often very productive when compared to permanent staff. They have lower unionisation and it does not cost too much to maintain them since their termination costs are lower. The only bad thing here is the ethical standing of such methods which deliberately create unemployment and project companies as being selfish and heartless.

Outsourcing

All companies, like individuals, are different. They are located closer to certain resources and far from others; have employees good in something and bad in other areas of production. This means there are companies which find it cheaper to make certain products/materials themselves than others, and still find themselves struggling in other goods.

In these cases, it is good to look for those who could provide the goods/services cheaper and outsource the service to them, which saves time and costs, since the best talented company concentrates at what t knows best and buys what it doesn't have cheap from the cheaper manufacturers. The result is lower overheads, faster production processes and more profits in the industry. This sometimes even leads to quality products emerging since everyone has the time to improve his/her own product without worrying much about what they cannot do.

Employing qualified workers

There is nothing that can beat experience when it comes to manufacturing quality products for less. Hiring qualified workers who have experienced all the highs and lows of the industry can improve efficiency. These veterans could be asked to work alone or train new ones in the company to learn the fastest, leanest and most profitable ways of production. With many experienced employees around, many professional ideas are combined to bring out ever improving production processes and final goods.

Using quality tools

The use of the best and most appropriate tools serves a lot of purposes and brings a variety of benefits too. These tools are fast, convenient to the user and motivating as well. Many employees enjoy their jobs when using faster cars, modern tools, less dangerous machines and less noisy plant equipment. It can be demotivating to see a lot of effort applied only yielding minimum and insignificant results, but a positive effect will be felt when employees feel they are contributing their all to some worthy cause. Quality tools produce many goods faster, cheaper and with an improved quality in the end.

Using quality raw materials

Quality raw materials are needed in the process if the right quality of goods is to be produced at a reasonable cost. One cannot use poor quality materials to produce good quality products. The best raw materials can assist employees in speeding up the production process, minimize errors and wastages. This minimizes costs and improves the profits greatly in the long run.

5.13 LIMITATIONS OF EFFICIENCY RATIOS

Price changes

Inflation is "the general increase in price levels in an economy". This creates inconsistencies and uncertainties in the trading environment, with amounts always depreciating over time. It becomes difficult to rely on nominal values and requires very complicated formulas to be used in determining the real values behind the financial statements required to calculate the efficiency ratios. They are hard to calculate and use in effective decision-making when the environment changes.

Sometimes the reverse of inflation, deflation also occurs. This is the constant decrease in prices which I sustained over a long period, resulting in lost revenue and profits for the business. It affects incomes as well as spending attitudes in consumers. It becomes difficult for buyers to even know when to spend and on what, which affects the way inventories have to be valued, managed and distributed. Volatile environments will always call for measures that are often viewed as unconventional, thereby, distorting the effectiveness of financial ratios.

Changes in the business cycles

Many efficiency ratios can be distorted during changes in the business cycle, since different measures are implemented during different times. During recessions, companies stock materials in bulk, in anticipation of price increases and this could suggest overstocking and other negative metrics. The implementation of these ratios greatly depends on the prevailing seasons, meaning it will be hard to apply them consistently.

Revenue recognition policies

A transaction was once defined as "any economic activity that affects the value/financial well-being of a company". Modern accounting, however, now tends to run away from this approach and leaves that decision to the individual firms themselves. What one firm calls revenues could be viewed as non-value adding income or income from non-essential operations by another firm. The effect that labor expenses have on one firm can also differ in another firm. Different firms use varying accounting methods and recognize different items as important; all this requires care to be exercised when comparing efficiency ratios between different companies.

Conclusion

Efficiency ratios are essential in ensuring the maximum revenues and profits are earned, using the minimum possible expenses. There are many ways by which this could be achieved without affecting the ethics and sustainability of the company. All a company needs is intelligent, innovative and mature leadership, willing and motivated employees and the right types of tools and raw materials, to implement the right procedures at the right place and pace, to achieve long-term success.

6 ACTIVITIES AND ANALYSIS

6.1 QUESTION 1

Please study the following condensed financial statements for XXX Company for the years 2005 and 2006:

Income Statement for the year ending 31 December ($)

	2005	2006
Sales	**15000**	**14350**
Less		
Cost of Goods Sold	(12300)	(11800)
Selling & Administrative Expenses	(1400)	(1250)
Interest Expense	(400)	(350)
Total Costs/Expenses	**(14100)**	**(13400)**
Income Before Tax	900	950
Income Tax Expense	(350)	(375)
Net Income	**550**	**575**

Balance Sheet as at December 31 ($)

	2005	2006
Current Assets		
Cash and Equivalents	150	400
Accounts Receivable	1800	1600
Inventory	2700	2000
Prepaid Expenses	150	200
Total Current Assets	**4800**	**4200**
Property, Plant and Equipment	3800	3500
Investments	50	50
Intangibles and Other Assets	1925	1600
Total Assets	**10575**	**9350**
Current Liabilities	**1300**	**1050**
Long-Term Liabilities	4300	3600
Shareholders' Equity	4975	4700
Total Liabilities and Equity	10575	9350

You are required to calculate the following ratios for 2006 and 2005 and comment on how you view the company's fortunes:

(i) Current ratio.
(ii) Return on assets.
(iii) The Net Profit margin ratio
(iv) Gross Profit Margin ratio
(v) Times interest earned ratio.
(vi) Inventory turnover.
(vii) Return on equity. (Hint: ordinary shareholders' equity on 12/31/2004 was 1760.)
(viii) Debt-to-total assets ratio.

Notes:

(Hint 1: Closing Inventory at the end of 2004 was $1630.)
(Hint 2: Total Assets at the end of 2004 were $8700.)
(Hint 3: Closing Shareholder's equity was $4400 in 2004)

6.2 WORKED SOLUTION

Ratios	2005	2006
(i) Formula = Total Current Assets/Total Current Liabilities	Current Ratio =4800/1300 =3.692	Current Ratio =4200/1050 =4
(ii) Formula =Net income/ Average total assets	ROA =550/(10575+8700)/2 =550/9637.5 =0.0571	ROA =575/(10575+9350)/2 =575/9962.5 =0.0577
(iii)Formula = Net profit / Total revenue	NP Margin =550/15000 =0.0366	NP Margin =575/14350 =0.040
(iv)Formula =Gross profit /Total revenue	GPMR =900/15000 =0.06	GPMR= 950/14350 =0.066
(v) Formula = Cost of goods sold/Average inventory	Inventory Turnover =12300/(2700+1630)/2 =12300/2165 =5.68	Inventory Turnover =11800/(2700+2000)/2 =11800/2350 =5.021
(vi)Formula=Income before Income Taxes and Interest /Interest Expense	TIE =900/400 =2.25	TIE =950/350 =2.714
(vii) Formula =Net Income/ Average Ordinary Shareholders' Equity	ROE =550/(4975+4400)/2 =550/4687.5 =.0117	ROE =575/(4975+4700)/2 =575/4837.5 =0.119
(viii) Formula= Total debt/ Total assets	Debt to assets ratio =(1300+4300)/10575 =0.529	Debt to assets ratio =(1050+3600)/9350 =0.497

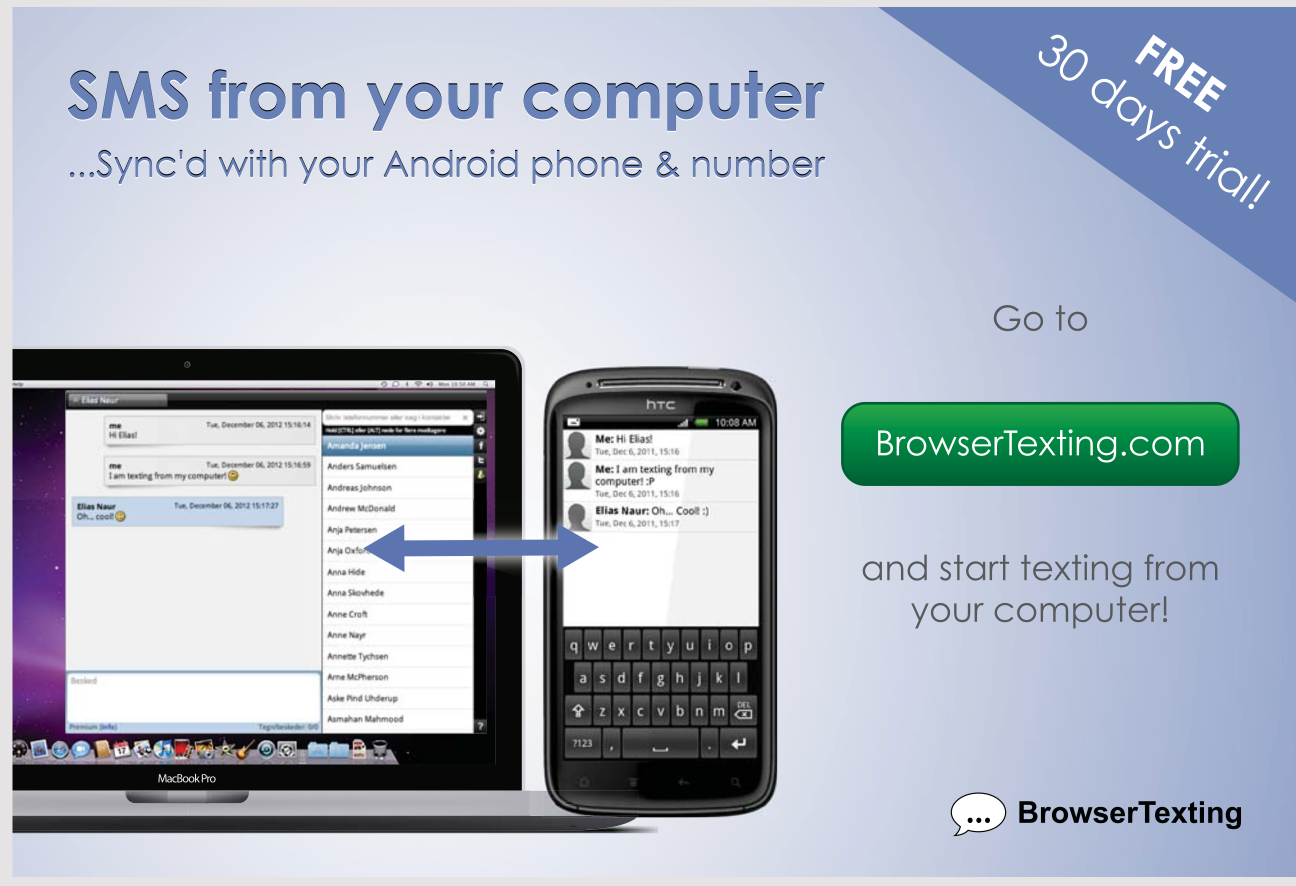
6.2.1 FINANCIAL RATIOS CALCULATIONS ANALYSIS

Current Ratio

The firm is capable of meeting its short-term debt commitments. However, the ratios are excessively much above the industry norm, meaning the management is over-cautious about liquidity and afraid of taking risks to grow. There might be too much resources that could be used to expand operations that they must release and make use of.

Return on Assets Ratio

There are a lot of assets but the profit is not that good, considering the proportions involved. The company must find means of generating more income per asset, reducing the amounts of assets employed while increasing the output realised.



Net Profit ratio

This is the profit remaining after settling the costs and expenses; It is still low and not improving by significant amounts and, therefore, a cause for concern.

Gross Profit Ratio

This is the profit realized, without considering the operational costs. Currently, gross profit is only $90 out of the $14350 that was realised as net revenue representing only a 6% increase of the previous year's figures. The slight increases from 0.06 to only 0.066 is a slow growth and not pleasing.

Times interest earned

The business is showing a good ability to meet its debt obligations with a ratio above the recommended 1: 2.0, which is good.

Inventory turnover ratio

The number of batches of inventory processed within a particular year is a good metric to measure revenue. There has been a slight decline, warning management of poor inventory planning and management, slow selling or overstocking. It must be monitored since, when it rises too high, it might be signifying occasional shortages of stock.

Return on equity

The returns to the contributors of the capital are also not pleasing. They slowly increased between the two periods but not significant enough to reach industry average.

Debt to total assets

This ratio is currently showing that there are more assets when compared to the amounts owed to other institutions, which is reassuring.

6.2.2 COMMENTS ON THE FUTURE OF THE COMPANY

Declines are still being experienced in important areas like profits, still indicating the need for more visionary management methods. While revenues are growing, there are corresponding increases in costs that, in time, erase the profits earned. The actual sales figures dropped notably from $15000 to $14350 in 2006, which is a cause for concern, since its effect was neutralised by the somewhat lower expenses that accompanied the slow activity.

The business has the potential to generate sales, but it needs to contain the cost of sales, which are over 80% of the revenue (The COGS include the "direct costs incurred in the production of the goods, including costs of materials, direct labour etc." (Hoeksema, 2012)). The company needs to introspect and consider using cheaper materials (without compromising quality), ethical cheaper labour (without provoking unions/pressure groups) and outsource other production processes that can be done cheaper elsewhere.

6.3 QUESTION 2

Please study the following condensed financial statements carefully and answer the questions below:

6.3.1 FINANCIAL STATEMENTS FOR XXX PVT LTD

Income Statement	2006	2007	2008	2009	2010
Gross Revenues	6160	7178	7802	3,592	7022
COGS	(1788)	(2090)	(2354)	(1,060)	(2066)
Gross Profit	4372	5088	5448	2,532	4956
Operating Expenses	(3990)	(4864)	(6916)	(2,678)	(5372)
Operating Income/Loss	**382**	**224**	**-1468**	**-146**	**-416**
Interest Expense	(0)	(0)	(24)	(36)	(34)
Income before tax	**382**	**224**	**-1492**	**-182**	**-450**
Income Tax Expense	(120)	(42)	(140)	(14)	(20)
Net Income After Tax	**262**	**172**	**-1632**	**-196**	**-470**

Balance Sheet

ASSETS	**2006**	**2007**	**2008**	**2009**	**2010**
Current Assets					
Cash	212	146	88	172	116
Receivables	130	202	186	0	136
Inventories	100	120	120	112	120
Prepaid Expenses	166	372	150	299	80
All Current Assets	**608**	**840**	**544**	**583**	**452**
Fixed Assets					
P.P. and Equipment	1096	1368	1642	1568	1454
Buildings	3824	4660	3534	3238	2840
Depreciation	(960)	(1156)	(1400)	(1564)	(1590)
All fixed assets	**3960**	**4872**	**3776**	**3242**	**2704**
TOTAL ASSETS	**4568**	**5712**	**4350**	**3822**	**3156**

LIABILITIES	**2006**	**2007**	**2008**	**2009**	**2010**
Current Liabilities					
Accounts Payable	800	1478	1486	1172	908
Long Term Liabilities	564	(820)	(738)	(368)	(68)
Total Liabilities	**1364**	**658**	**748**	**804**	**840**
Ordinary Shares	286	2136	2234	1976	1748
Dividends	**0**	0	0	0	0

Q. Applying the formulas learnt in this book, analyse the company's performance section by section and assist management with the ratios required to make improvement decisions.

6.4 WORKED SOLUTION

PROFITABILITY/RETURN ON INVESTMENT RATIOS

Gross profitability:

Formula =(Gross Profit/total revenue)

=4956/7022

=70.57% (Profit before settling expenses is very good).

Net profitability:

Formula =(Net profit/total revenue)

=-470/7022

=-6.69% (Profit after settling expenses is very low; in fact, a loss. Expenses are too high and are hurting the business).

Return on assets:

Formula =(net income/average assets)

=-470/(3822+3156)*0.5

=-470/3489 =-0.135 (Shareholders are not earning any returns because of the lack of efficiency that raises costs)

Return on equity

Formula =(Net income/Average equity)

=-470/(1976+1748)*0.5

=-470/1862

=-25.24% (Shareholders are experiencing negative returns/losses on their equity; they are contributing more than they are getting in return, which is bad)

Earnings per share (earnings/number of shares)

There has been no declared dividend in 5 years, and this could lead to many investors jumping ship and blacklisting the company from attracting future investments.

LIQUIDITY RATIOS

Current ratio:

Formula =(current assets/current liabilities)

=452/908

=0.499 or 0.5 (More liabilities than assets; there is negative liquidity and the company is at the mercy of the creditors; if they tighten their payment demands, soon the company may have to close down or sink further into debt while trying to please older creditors).

Quick ratio/Acid test

Formula =(current assets-inventories/current liabilities)*

=(452-120)/908

=0.365 or 0.367 (There is still a very big gap, with liabilities exceeding the assets and that is a cause for concern).

*(Some definitions also refine this ratio by subtracting prepaid expenses, advances, etc, just to get a narrower definition of the Quick ratio).

Cash to total assets:

Formula =(cash/total assets)

=116/3156

=0.03 (Much has been invested in assets, somehow, reducing the liquidity).

Accounts Payable Turnover

Formula = (Cost of Sales) / (Average Accounts Payable)

=2066/(1172+908)*0.5

=2066/1040

=1.98

There is more cost of sales than average accounts payable, which means fewer outstanding debts. Debt collection improvements will be sought though, in the near future.

SOLVENCY RATIOS

Debt to equity ratio:

Formula =(debt/total equity)

=840/3156

=26.61% (The shareholders still have a large control over assets than creditors).

Times interest earned

Formula = (EBIT/Interest expense)

=-416/34

=-12.24 (The earnings are too low to pay debts, and this is dangerous).

EFFICIENCY RATIOS

Inventory turnover:

Formula =COGS/(average inventory)

=2066/(112+120)*0.5

=2066/116

=17.81 (They can sell inventory relatively fast, which shows good potential).

Accounts receivable turnover

Formula =Credit sales/Average accounts receivable

This business, unfortunately, does not record credit and cash sales separately, which makes it hard at this stage, to see how much of the credit sales are turned into cash. This number must be compared to the industry norms and be used in reforming the credit policies to ensure all amounts owed are received in time. They must guard against relying too much on accounts receivable since they cannot be ascertained and the future is always unpredictable.

SUMMARY

Whatever it is that led to the rise in non-operating expenses to 174% in 2008 needs to be investigated and controlled. The company earns a good gross profit at around 70% of net sales (i.e. 4956/7022) but also incurs an even higher operating expenses to sales ratio of 76% (i.e. 5372/7022), and this erodes all the profits.

It seems the company might be delaying/hesitating to implement radical efficiency measures, like restructuring workforce, operations and optimizing support services. At this rate, the company may soon struggle to meet all its payment obligations and that could threaten its solvency, with creditors/suppliers breathing down on its neck, while financial institutions are usually skeptical of offering new credit lines in times like this. The current level of expenses is still high and the company seems to be failing to bring them down. This makes it very hard to achieve any profitability soon, with the losses beginning to show an upward trend again.

Assets are now 69% of what they were in 2006, while liabilities have increased by 28% over the same period. Of even more worrying concern is the liquidity level of the company, with cash levels now almost half of what they were. There were no accounts receivables in 2008, not necessarily indicating good collection skills, but caused by inadequate sales levels. This shows how much the business is struggling to raise revenue from its main operations, meaning whatever income is made now, is not sustainable and cannot be relied upon for long.

We used 2006 as the base year, or reference point and everything is expressed as a percentage of that year's performance indexes. The positive indicators (Revenues and Assets) are not performing well; they are even declining, with assets now reaching up to half of the base year's levels. This indicates falling fortunes, depleted assets and accumulating debts, since liabilities are rising sharply and only decrease slowly at times. The company is highly geared, heavily indebted to creditors, shareholders and suppliers. Very soon, it may face legal challenges from suppliers if it defaults on payments and could be up for judicial administration or hostile/desperate takeovers. A cash injection is required, to improve operations, maintain liquidity and start implementing various efficiency measures in order to be profitable, otherwise, insolvency can be declared sooner or later, if management does not act accordingly.

COMMENT ON THE FUTURE OF THE COMPANY

The company is not performing well in the profit categories, return on investments and not attracting investments using dividends, which is a cause for concern. Many wholesome changes in the capital structure, management style and mode of business are recommended if they are to survive into the near future since they cannot ignore the negative profit figures currently being witnessed.

How to write a Management report

There is no prescribed format that needs to be followed in presenting the administrators' viewpoints, in assisting decision makers arrive at a workable solution. Managers need to explain in form of notes and/or attach a report to go in hand with the statements explaining what happened, putting it in the language and understanding of the ordinary investor with no higher learning qualification. They need to comment on major highlights and their impacts to the success of the business and recommend solutions that the board of directors could consider adopting to change the future outlook.

The Report could include comments on the state of assets, costs, equity, liabilities, profit margins, dividends and retained earnings. If there have been losses or performances below average, it will be time to address how such situations will be avoided in future.

New methods of collecting accounts payables and modification to the creditors' policies will also be considered if changes are required in these areas. It can never be over-emphasized that the choice of people to do business with must be exercised with care; buying from and selling to the wrong people will never help businesses going forward.

State of operating assets

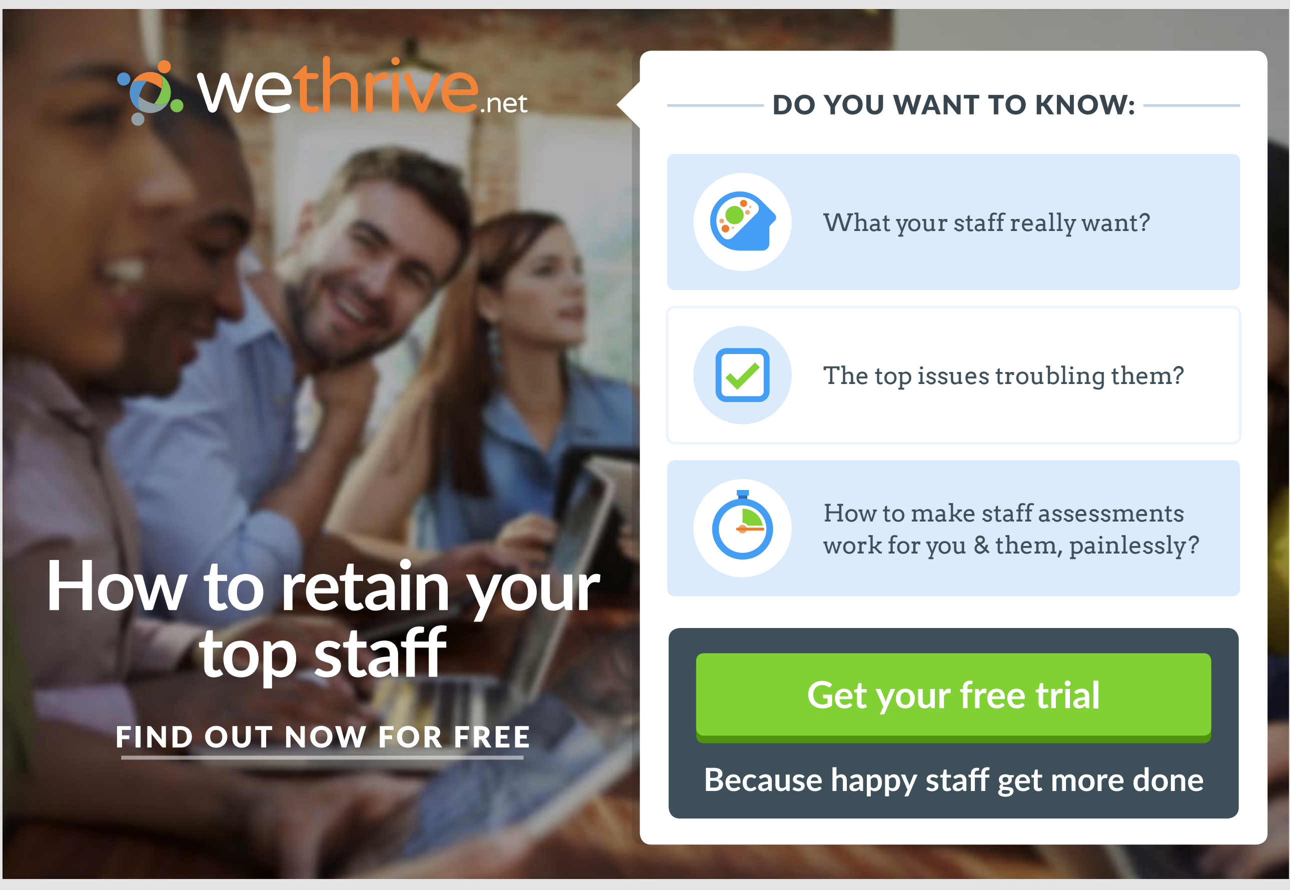
Major decisions regarding plant and equipment that has been sitting idle need to be made as soon as possible, and it is the management performance report that could bring it to the attention of the decision makers with all the decision-making information available to aid the process. The company has to decide what to sell, buy, maintain, outsource and who to hire/lease from in future. These are proactive measures that could reduce depreciation, maintenance and other expenses and improve staff optimisation processes since redundant posts can be identified and abolished as mentioned earlier in this book.

Negative indicators

The report is not complete if it does not show what was not properly done and all areas that need improvement. Companies can achieve high Gross Margins but still fail to declare dividends after realising that operating expenses are not proportional to the scale of operations, signalling problems in the future. This might be due to the need to replace aging, inefficient plant and replacing incompetent staff in the coming periods. Managers acting alone cannot implement these tough measures on a daily basis without board approval.

Resolutions

The process can only be complete if the board understands exactly what the business is undergoing and understands exactly what has to be done to remedy the situation. Action plans in response to the report could be tabled, debated and modified before being adopted. The actions taken based on the information are more important than the information itself, since the wrong course of action could still be disastrous after all the amounts of hard work to get the plans together.



CONCLUSION: LIMITATIONS OF FINANCIAL RATIOS

Ratio analysis is very useful in summarising business activity and putting it in the language convenient for business decision making. They can compare various elements and help in ***finding a problem within a problem***, by identifying even the smallest components of variables which can be adjusted to improve operations. These measures fulfil the desire of many users of accounting information who are only interested in certain sections of the business, and those needing thorough overviews of operations for various reasons.

As is the case with every mathematical/scientific model, their results need not to be taken blindly without further inferences and analysis. There are a few limitations of ratio analysis as outlined below:

Businesses are not static

No single day or week in life will ever face the same events. A business will never face the same situation twice. All the figures presented here are records of past performance, and there is no way they can accurately predict the future. Some products are consumed once in a lifetime, e.g., buying a house. There is no way by which ratios can accurately foretell trends in this market in the future since buyers never get to follow routines/habits which can be accurately predicted. So ratios will always remain estimates, since the business' environment changes every day. We wake up each day facing a new day, new customers, new consumer disposable income, new preferences and "new" employees. What made people buy yesterday changes tomorrow and ratios will never itemize when such changes will come into effect.

The data presented represents the past at historical figures, which could be different from the current and future situations. Some businesses are innovative enough to ignore this and seek new solutions best suited for their prevailing situation. Ratios sometimes prescribe a "one-size-fits-all" situation, which may not always be practical since what works for company A may be completely disastrous for Company B, despite their similarities and operating in the same industry. Each company has its own staff with its own attitudes, its own goals and different levels of gearing and preferences.

External environment.

Businesses are subject to the broader economic and market environment and can sometimes fail to succeed despite doing everything as recommended by the ratios, since these factors are beyond management control. No management team can ever influence changes in an economy like inflation, interest rates, unemployment and competition in the marketplace. Ratios may indicate one thing, but these larger forces often have the last say if management cannot adapt to suit their requirements. So, regardless of the fact that the internal environment may be requiring decreasing , say, the inventories, by a certain margin, the inflation rate can still come and erode the future purchasing power by increasing the market prices of raw materials and make the management wish they had ignored the ratios and bought in bulk while they still had the opportunity! This underscores the need not to overly rely on ratios alone, but focus on other broad economic issues outside the business' scope of influence for solutions.

Most ratios are average figures

Aggregates are made up of different kinds and sizes of data, which use scientific/ unrealistic methods information to determine behaviours and measure their tendencies. The means, medians and modes could be influenced by outliers (Companies with unusually high figures are hard to identify if they are mentioned among ordinary performing firms, and they could be big competition despite the average figures seemingly reporting ordinary market conditions.) This means the company can ignore the threat of a big competitor and align itself with unrealistic 'medium' standards represented by the average market ratios, since the individual companies' performances are usually ignored.

Accounting policies are never the same. What one company chooses to report and on and include in their strategy is different from the other. Same applies to the items companies choose to group together in aggregates; they will also never be the same. It is almost impossible to make a judgment decision which needs comparing two unlisted companies, based solely on ratio analysis, unless we have inside information on the vision and day-to-day strategic directions.

Changes in scope and scale of production

As businesses pass through various phases, it will encounter challenges which require major changes in the management, plant, equipment, staff, and production. Others come across good fortunes and decide to pursue new directions, while legislation, the economy and changes in the consumer market can also require new strategic directions. Some businesses have to eventually do away with one or more product lines, add one or more and change their visions and levels of investments for various reasons. There is no business that can remain static so as to allow the exact same items to be compared to each other every year for 20 or 50 straight years.

The subsequent periods often find the company having new members, CEOs (since no-one can live forever), more or less workers and facing different problems or even serving new markets with different competitors. and unique challenges new to everyone. What used to be acceptable last year could be disastrous this year and worse next year (e.g. the new CEO might have been inexperienced when he/she started and expectations in his first few years were not as optimistic as they will be when he/she accumulates 5-10 more years' experience). A company with 5 product lines wouldn't mind if one of them doesn't perform well, but if they have trimmed down operations to focus on one specific product; it takes first priority and its failure is not taken lightly.

No universal Interpretation.

"One man's meat can be another man's poison" in many business models. One small business with a tight marketing budget can enjoy hearing that a bigger business next to it is performing well in marketing the same products as itself. While this may sound dangerous, it does work, since every business has its own way of surviving. Small businesses survive by taking the leftovers from big players, and the bigger the market share of the big player, the larger will be the residual spillover benefits for the small firm. ***So a ratio which indicates that the competitor is getting bigger and better than you sometimes could actually be the best news!*** (Small firms will wait for the big company to make the community aware of the product, then they open earlier and close later than the formal shop, they extend informal credit and even subcontract big firms)

That is the reason why it will be inappropriate to compare different companies, because they will never use the same strategy. Yes there are some features of the ratios which need to be achieved by everyone but not all of them will work the same. For example, IT firms hardly have a tenth of the equipment that a big industrial giant has and having different Return on Asset ratios will never automatically mean one is better than the other. Companies vary in sizes, scope and scale of production and are always endowed with different resources. One is located closer to farms, one is near mines and another is in the city center. One pays no rent, another has the cheapest labour, and the other has the most competent labour around it, so their fortunes will always differ, and so will the strategies.

Financial ratios must not be relied upon alone, but can be used as a guide to indicate trends, but above everything, nothing will ever replace sound human judgment coupled with industry experience in making sustainable decisions.

HAPPY STUDYING!

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