SERVICE MARKETING
With
Professional Approaches

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CHAPTER EIGHTEEN

FINANCIAL ANALYSIS
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INTRODUCTION:

National and International business transactions have shown a comparative geometric grov This has consequently widened the scope of business activities and made its operation more comp than ever. Professionalism in the management of the growing business activities is inevitable. Th cumulate in greater challenges to financial managers and business enthusiasts. These challenges only be met by ensuring the availability of business information upon which an objective investm decision is taken. Essentially, the success or failure of any business depends significantly not only how informed the operators are but also to what extent the available information by financial manag has been accentuated. Unfortunately, there is generally a gross shortage of available data information necessary for the analysis of cooperative performance by financial managers/analysis Even when they are available, there is, sometimes, neglect of their availability or absolute ignorance the data or tools relevant for their analysis. This has, no doubt, affected the investment decision investors, financial managers/analysts, who have not availed themselves of the numerous tools financial analysis. Consequently, the growth and development of the economy is negatively affected

This chapter is therefore, dedicated to, exposing readers in greater detail, the tools of financ analysis, the users of such tools and their significance as well as limitations in using some of the tools.

Principally, financial analysis is a quantitative exposition of the strengths and weaknesses of t operations of a business enterprises. It is concerned with the total business financial requiremen sources and availability of funds as well as uses of these funds (funds flow) and the optimum finan mix (capital structure). The outcome of any financial analysis should deduct the performance or n performance of the company under the prevailing economic, social or political circumstances.

Financial analysis is a very important weapon for investment decision making by financ managers and it is undertaken by outside supplier of capital, creditors, investors, and also the fir itself. The type of analysis varies according to the specific interests and needs of the parties involve For instance, trade creditors are primarily interested in the liquidity of the firm, as their claims a short-term in nature while bond-holders whose claims are long-term are interested in the cash flo ability of the firm to service debts over the long-run. Investors in ordinary shares in a company a interested in present and expected future earnings and the stability of these earnings about a trend well as their covariance with the earnings of other companies. Management may analyse itself in ord to identify the potential strengths and weaknesses of the firm(Conner and Bueso 1981:493) or fi

internal and external control of the firm (Okereke 1995:29). Thus, financial analysis considers trade creditors, debenture holders, bankers, potential purchasers of a business, governmental bodies, firm's management research institutes, trade associations, etc.

Lee (1982:407-408) stated that the company is a black box whose inner workings are unknown, but certain aspects of its operations are susceptible of measurement at regular intervals. The measurement taken together and judiciously interpreted (through various financial analysis tools) allow an objective opinion to be formed as to whether the business is healthy in financial sense and as to how well it is achieving its financial and other objectives.

Financial analysis is not done in a vacuum. A number of documents are involved for a result oriented analysis. These documents are called financial statements.

FINANCIAL STATEMENTS:

Financial statements are documents involved in financial analysis. They represent a numerical picture of a firm's financial and operating health. They are the end result of the process of recording, classifying and summarising the firm's transactions. Put in another way, financial statements are assemblage of financial data arranged and organised in accordance with some logical and consistent financial procedures. The main purpose is to convey an understanding of the performance of some financial aspect of the business enterprise. A firm's financial statements summarise where the firm stands financially, how well it is making money for its owners and comparative position of the business concern for a wider variety of users.

Thus, financial statements are not only important to the firm's managers in managing the firm, but also serve and provide information to present and potential creditors, leaders, financial analysts, investors and other interested parties such as labour unions, governmental agencies, employees, and customers.

Financial statements are prepared by companies for a number of reasons, among which are:

1. Source of data for investors, analysts and creditors in analysing and deciding the attractiveness or otherwise of a firm, as an investment outlet.

2. Provide comprehensive picture of general management performance during and over a time period.

3. As a statutory requirement by government for tax and statistical purposes.

   Osubor (1984:117) identified four most important documents in financial analysis as Balance sheet, the Income Statement, the Statement of Retained Earnings and the Sources and Application of Funds Statement.

Balance Sheet

The balance sheet is a listing of the resources of a business together with equities or interests of creditors and owners in those resources. It is a statement of the financial position of an enterprise at a given date and it reflects the result of all records of accounting/financial transactions since the

enterprise was formed. It is a classified summary of all asset and liability accounts remaining in the ledger accounts after the balance of the nominal (income and expenditure) accounts have been transferred to the profit and loss account. (Keown *et al* 1983; Horngren *et al* 1987: I; Okereke 1995:9). According to Weston and Brigham (1978:136), Balance Sheet shows the value of the firm's assets and of the claims of these assets at two particular points in time.

The balance sheet is divided into two parts.

(a)   The Assets and

(b)   Liabilities in addition to stockholders equity. The asset side of the balance sheet represents the resources controlled by the firme while liabilities in addition to owners capital show how these assets have been financed. The sum of both sides of the statement must always agree. A typical balance is fully illustrated in the typical sheet of an indigenous company shown below.

Fig 1: JESO INTERNATIONAL (NIG).
Balance Sheet As At December 31, 1989.

Assets	N'000	Liabilities	N'000	
Cash	50	Account Payable	60	
Cash Marketable Securities	150	Notes Payable 8%	100	
Receivable	200	Accruals	10	
Inventories	300	Provision for Income Tax	130	
Total Current Assets	700	Total Current Liab.		300
Gross point and Equilibrium	1800	First Mortgage Bonds 5%		
Less Depreciation	500	Bonds 5%		500
Total Fixed Assets	1300	Debenture 6%		200
		Common Stock		
		600 shares @ N1000 per		
		share	600	
		Retained Earnings	400	
		Total Net Worth		1000
Total Assets	2000	Total Liabilities		2000

This balance sheet is used in other analysis in this chapter.

Income Statement

Income statement is a summary of a firm's operating results for the past period usually one year. It matches accounts received from sales of goods and other items with all cost incurred in operating the company for that period. This result is in the net income which is distributed between shareholders dividend and retained earnings. Income statement also reports the firm's relative earnings ability by providing information on the firm's earnings per share (EPS). It serves as a good criteria in evaluating the current performance of a company and its envisaged future performance. It is a major device for meauring the profitability of a firm over a period of time usually a year. Thus, it is of great interest to shareholders and investors.

A typical Income Statement is illustrated below;

Fig. 2: JESO INTERNATIONAL (NIG.)

Income Statement for the Year Ended 31st December, 1989.

	N'000	N'000
Net Sales	3000	
Cost of Goods Sold	2580	
Gross Profit		420
Less: Operating Expenses		
Selling	22	
General Admin.	40	
Lease Payable on Office Building	28	90
Gross Operating Income		330
Less Depreciation		100
Net Operating Income		230
Add: Other Income		
Royalties		15
Gross Income (EBIT)		245
Less Other Expenses:		
Interest on Notes Payable	8	
Interest on First Mortgage	25	
Interest on Debenture	12	45
Net Income Before Tax		200
Income Tax (40%)		80
Net Income		120

This illustration is used in our other analysis.

Accumulated Retained Earnings Statement

Earnings may be paid out to stockholders as dividends or retained and reinvested in the business. Stockholders like to receive dividends but if earnings are ploughed back into the business, the value of the stockholders position in the company increases. The accumulated retained earnings statement summarizes the changes in retained earning from one balance sheet to another. The procedure for a simple retained earning statement is shown below.

Previous Retained Earnings	x	
Add Net for the year past	xx	xxx
Less Dividend Paid	x	
New Balance on Retained Earnings	xx	

Sources and Application of Funds Statement

This is a statement that describes the change in funds position over a period of time. It shows why and how working capital has increased or decreased from one balance sheet date to another. Thus, the statement is prepared from the information provided by the income statement and balance sheet. It reconciles changes in the balance sheet and income statement. Specifically, sources and application funds statement explains why the ending cash balance of a company deviates from the profit made the same accounting period and gives information to help assess the liquidity position of a company.

A classified sources and uses of funds statement is shown below.

	Sources		Uses
1.	Depreciation or other capital consumption allowance	1.	Net loss for the year
2.	Sales of fixed assets	2.	Dividend payment
3.	Net Profit for the year	3.	Purchase of fixed assets
4	New Equity or long term debt financing	4.	Retirement or Repurchase of stock or long term debt.

For efficient and effective analysis of the above documents, various tools are used. These tools (techniques) are called tools for financial analysis.

Tools for Financial Analysis and Their Limitations

Horne (1980:712) defined tools for financial analysis as a yardstick for evaluating and measuring the financial condition and performance of a firm. Thus, it helps the financial manager to

achieve his basic responsibilities in the firm. Mathur (1977:4) identified the responsibilities of the financial manager as.

(i) Identifying and maintaining the most desirable combination of assets for the firm, that is the decision regarding the firm's assets (Investment decision).

(ii) Identifying and maintaining the most desirable combination of methods of financing the firm's assets. That is, financing the needs of the firm through a desirable combination of debt and equity (financing decision).

These and other responsibilities of the financial manager can efficiently and effectively be carried out with a proper knowledge, understanding and application of tools for financial analysis. It becomes obvious why every interest group (creditors, investors, firm itself, etc.) is interested not only in the tools but also in the limitations associated with each tool.

Essentially various tools for financial analysis are grouped into:

1. Budget and Budgetary Control Report
2. Charts; Pie or Bar charts.
3. Evaluation Techniques
   (i) Payback Period (PBP)
   (ii) Present Value (PV)
   (iii) Interest Rate of Return
4. Estimation Method
5. Shadow Pricing
6. Ratios

These tools are important for the firm's operations and for efficient forecasting, planning and control by financial managers. They are critically examined here. However, greater attention is given to the 6th group - Ratios, because of their frequent application in everyday business decision.

BUDGET AND BUDGETARY CONTROL

To start with, budget has been defined by an Industrial Accountant (1984:75) as "a financial and/or quantitative statement prepared prior to defined period of time of the policy to be pursued during that period for the purpose of attaining a given objective" and Control as "the establishment of budgets relating the responsibilities of executive to the requirements of a policy and the continuous comparison of actual with budgeted results either to secure by individual action the objectives of that policy or to provide a basis for its revision." From the above, it can be seen that budgets are essentially forward-looking and they provide yard-sticks for purposes of comparison.

The objective of budgetary control, among others, is to provide a yardstick against which actual results can be compared. To achieve this, a continuous flow of reports is required each month to show comparison of actual performance with that budgeted. The report will show favourable or adverse variations from the budget. Based on this, efficiency or inefficiency will be revealed so that

where necessary remedial action may be taken before it is too late. Such reports provide valuable guides to future planning.

This tool has been criticized on the basis of timing. The time involved in preparing budgetary control report may delay actions involving immediate decision. The bureaucratic setup of our organisations lend credence to this. However, one need not overemphasize this because of the conspicuous position of budget as an instrument of financial analysis. Precisely, budget dates back to 1733 (Bhatta; 1977:238) and since then it has been a very powerful tool for financial analysis.

CHARTS:

Charts are statistical tool used in analysing data. It may be pie chart or bar chart. As a tool for financial analysis, it can be used to effect control especially for a production company. This can be achieved by the analyst taken note of the performance of their investments in charts (pie or bar) and at the end they use it for analysis.

The use of charts in financial analysis is time consuming and decisions may be delayed. For charts to be used, figures must be calculated and represented and before these are concluded, actions requiring immediate decision may be hampered.

EVALUATION + BUDGETARY TECHNIQUES:

This, as a tool of financial analysis, is used to evaluate the profitability or viability of a project for our purpose here, pay back period (PBP), Present Value (PV) and Internal Rate of Return (IRR) will be cited.

(a) **Pay Back Period:** This is the time required to repay the investment cost of a project from its net proceeds. It is calculated thus:

$$PBP = \frac{\text{Total Investment Cost}}{\text{Net Annual Cash inflows}}$$

This has not been a workable tool of financial analysis because of its failure to take account of the time value of money and the fact that it completely ignores post-capital recovery cash flows.

(b) **Present Value:** This is the non-discounted proceeds of a firm.
The use of Net Present Value (NPV) will be a better tool since Present Value (PV) of a firm may give a good performance but bad performance after discounting it. Generally, it is better to discount and make comparisons. Even the Net Present Value is limited by unsatisfactory result when projects being compared involve different amounts of initial cost as well as unequal lives (Okereke, 1995:150).

c) **Internal Rate of Return (IRR):** This is the rate of discount that will match the discounted value of cash inflows and outflows.

The technological developments of the society makes the use of this tool impossible because of the difficulty involved in computing IRR except with the use of computer. It is also analytically weak since it assumes the reinvestment of cash flows at IRR and there is possibility of multiple IRR for the same project.

ESTIMATION METHOD

This is a tool involving more observation by the analyst. The greatest weakness of this tool lies in its high subjectivity.

SHADOW PRICING

This is a tool used to measure the social benefits accruing from a particular project or investment. Shadow pricing or dual solution is a sensitivity analysis method of evaluating an optimum plan (for social benefits from a project) by linear programming technique.

This tool is criticized on its linearity assumption and the deterministic nature of the tool. The optimum plan of the tool suggests a solution by satisfying the constant that may not be feasible by common sense.

RATIOS

Ratios are very important tools in analysis of financial statements. Ratio is the relation that one item bears on another. Pandey (1987:500) defined it as the process of identifying the financial strengths and weaknesses of the firm by properly establishing relationships between the items of the Balance Sheet and the Profit and Loss Account. He wrote that management of the firm would be interested in every aspect of the financial analysis by the thorough evaluation of information contained in the entity's financial statements by converting account balances into meaningful and comparable relationships.

Each type of analysis has a purpose or use that determines the different relationships emphasized in the analysis. Management, of course, is concerned with all those aspects of financial analysis. Hence, ratios have been classified into Liquidity ratios, Leverage ratios, Activity ratios, Profitability ratios, Growth ratios and Valuation ratios. Figs 1 and 2 are used for our illustration.

(I)   **Liquidity Ratios**

These are the means of measuring the firm's ability to meet its maturing short-term obliga
The focus by financial managers on liquidity ratios is the reliability of liquid assets figures. !
commonly used liquidity ratios are:

(a)   **Current Ratio:** This is the most commonly used measure of short-term solvency. It indi
the extent to which the claims of short-term creditors are caused by assets that are expect
be converted to cash in a period roughly corresponding to the majority of the claims.
It is computed thus:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} \quad \frac{700,000}{300,000}$$
$$= 2.3$$

This is interpreted to mean that current assets are 2.3 times current liabilities indicating a ɪ
performance. That is, there is ₦2.30 for every ₦1.00 short-term debt. If the ratio is less
one, it means that working capital is less than debt obligations and therefore the compa
over-trading. On the other hand, if there is excess working capital to debt obligations, the
is said to be undertrading.

It is important to state here that the use of this tool in decision-making ma·
misleading. For instance, if the current ratio shows 2.3: 1, this is a good performance by ɪ
observation but suppose the stocks, which account for three quarters of the current assets
made up of obsolete items, the position would have been distorted using the balance s
aggregate figures. Thus, it is a test of quantity not quality. It measures only Naira wort
current assets and liabilities and assumes that assets and liabilities are not subject to fa
value.

It is often necessary to go further than the balance sheet figures by demanding details and o
information backed by personal visit to the firm in order to get a more accurate assessmer
the true position.

(b)   **Quick (or Acid Test) Ratios:**   This is a measure of the firm's ability to pay off sl
term obligation without relying on the sale of stock (inventory). It is calculated by dedu·
inventory (stocks) from current assets and dividing the remainder by current liabilities.

The Ratio is calculated thus:

Quick Ratio = $\dfrac{\text{Current Assets - Inventory (stocks) + Prepaid Expenses (if any)}}{\text{Current Liabilities}}$

That is, $\dfrac{\text{Cash + Marketable Securities + Receivables}}{\text{Current Liabilities}}$

$= \dfrac{400,000}{300,000} = 1.3$

The ratio means that for every ₦1.00 current liability there is ₦1.30 of current assets to meet it, and this does not include inventory (stock) and prepaid expenses, (if any) implying good performance of the company.

Since the calculation of these ratios are based on interim reports it may be highly misleading especially if the operation of the firm has any degree of seasonality. For instance, a firm with a seasonal cash need may have a very low acid test of certain times and very high acid test ratio of other times in the year and still be operating normally (Bolten, 1976:10).

Net Working Capital to Total Assets

Net Working Capital is the difference between current assets and current liabilities. It measures a firm's potential reservoir of cash. Financial managers often express net working capital as a proposition of total assets.

$\dfrac{\text{Net Working Capital}}{\text{Total Assets}}$

The results from this calculation means that for every ₦1.00 total assets, there is a calculated amount of Net Working Capital which reveals the level of cash within the total assets of the firm.

(d) **Cash Ratio:**

The most liquid assets in a firm's balance sheet are its holdings of cash and marketable securities. Hence, financial managers are interested in the cash ratio, which is calculated thus:-

$\dfrac{\text{Cash + Marketable Securities + Receivables}}{\text{Current Liabilities}}$

(e) **Interval Measure:**

This tool tries to measure whether a firm's liquid assets are large enough relative to its regular cash outgoings. Interval measures is mathematically calculated thus:

$$\frac{\text{Cash + Marketable Securities + Recievables}}{\text{Average Daily Expenditures from Operation}}$$

The outcome of this calculation is the number of days which indicates that the firm, within these days, sufficient liquid assets to finance its operation whether or not it receives additional cash.

(ii)   Leverage Ratios:

Leverage (or gearing) ratios measures the extent to which the firm has been financed by debt. It measures the funds supplied by owners as compared with the financing provided by the firm's creditors. This has a number of implications. First a margin of safety. Second, by raising funds through debt, the owners gain the benefits of maintaining control of the firm with a limited investment. Third, if the firm earns more on the borrowed funds than it pays in interest, the return to the owners is magnified.

Firms with low leverage ratios have less risk of loss when the economy is in a downturn, but they also have lower expected returns when the economy booms. Conversely, firms with high leverage ratios run the risk of large losses, but also have a chance of gaining high profits. Whitehead and Upson (1982:320) wrote that "low leverage means that fixed interest funds are small relative to equity. On the other hand, high leverage means fixed interest funds are large relative to equity". Pickles (1982:2623) wrote that high general equity shares will rise rapidly in a period of depression, whilst 'low geared' equity will rise more slowly in a period of prosperity and suffer a more gradual fall in a period of depression.

Leverage ratios include:

(a)   Total Debt to Total Assets Ratio:

This is generally called the debt ratio. It measures the percentage of total funds provided b creditors. Creditors are interested in the amount of capital provided by equity holders. Hence, the prefer moderate debt ratios, since the lower the ratio (or the higher the equity ratio), the greater th cushion against creditors' losses in the event of liquidation.

This is calculated as

$$\text{Debt-Asset Ratio} \quad = \quad \frac{\text{Total Debt}}{\text{Total Assets}} \quad = \quad \frac{1,000,000}{2,000,000} \quad = \quad 50\%$$

This means that creditors supplied half of the firm's total financing. JESO would find it difficult t borrow additional funds without first raising more equity capital. Creditors would be reluctant to ler the firm more money and JESO would probably be subjecting the equity-holders to undue risk if sought to increase the debt ratio even more by borrowing.

The problem with this tool is the debunking of debts and assets together. A more realist approach would have been relating the debt (long or short-term) to the individual assets of that firm.

Other Leverage Ratios include:

Debt-Equity Ratio or Debt-to-Net Worth Ratio

$$= \quad \frac{\text{Total Debt}}{\text{Equity}} \quad \text{or} \quad \frac{\text{Total Debt}}{\text{Net Worth}}$$

Some financial managers defined debt to include all liabilities other than equity. In such situation Debt ratio equals

$$\frac{\text{Total Liabilities - equity}}{\text{Total Liabilities}}$$

There may also be the need to calculate the ratio of long-term debt to total capitalization of the firm. Under such a case, the ratio is calculated thus:-

$$\frac{\text{Long-term Debt}}{\text{Total Capitalization (Long-term Debt + Net Worth)}}$$

Note: If a firm is into lease agreement, the value of the lease obligations should be added to the total long term debt. This is because lease agreements are long term in nature.

(b)   TIMES INTEREST EARNED RATIO

The ratio measures the extent to which earnings can decline without resultant financial embarrassment to the firm because of inability to meet annual interest costs. Thus, the ratio relates financial charges of a firm to its ability to service them.

$$\text{Times Interest Earned} \quad = \quad \frac{\text{EBIT}}{\text{Interest Charges}}$$

$$= \quad \frac{225,000}{45,000} \quad = \quad 5 \text{ times}$$

$$\text{Industrial AV.} = \quad 8 \text{ times.}$$

As can be observed, the ratio showed that the number of times interests are earned compared to other firms in the industry leaves much to be desired. JESO should therefore maintain a relatively comfortable debt capacity so as to be able to pay its interest charges. Also, the firm should exercise some control over its operating expenses so that after interest charges are deducted from earnings before interest and taxes, it can still have some reasonable amount left.

The tool is defective because of non calculation of taxes before arriving at the ratio and the non consideration of fixed obligations like preference, dividend and repayment of principal. Hence, deciding based on the analysis may be misleading.

(c) FIXED CHARGE COVERAGE RATIO

This is similar to the times interest earned ratio, but it is somewhat more inclusive in that it recognises that many firms lease assets and incur long-term obligations under lease contracts. It can also be regarded as a ratio that shows the ability of the firm to meet its cash payment, licensing fees, or sinking fund charges (Hirt and Block, 1983:168). It is defined as:

Fixed Charge

$$\text{Coverage Ratio} = \frac{\text{Profit Before Interest and Tax} + \text{Interest Charges} + \text{Lease Obligations}}{\text{Interest Charges} + \text{Lease Obligations}}$$

$$= \frac{20,000 + 45,000 + 28,000}{45,000 + 28,000}$$

$$= \frac{273,000}{73,000} = 3.7$$

This indicates that the firm is somewhat weaker than creditors would prefer it to be, and it points up the difficulties management would likely encounter if it attempted additional borrowing.

The use of this ratio may be misleading since in exceptionally good year, the ratio may look more than adequate only to be less than adequate in which earnings decline.

Note: If earnings fall across a number of years, an average of the earnings and interest is used in computing the ratio. The idea is to smoothen temporary peaks and troughs.

(ii) **Activity Ratios:** Activity ratio measures how effectively the firm utilizes its assets in generating sales, (i.e. the resources at its command). These ratios involve a comparison between the level of sales and the investment in various assets accounts. They presume that a proper balance should exist between sales and various asset account - stocks, debtors, fixed assets and others. Activity ratios can be called efficiency ratios and they include ;

(a) Stock (Inventory) Turnover Ratio.

This measures the liquidity of the firm's inventory.

It is computed as:

$$\text{Inventory Turnover} = \frac{\text{Cost of goods sold or sales}}{\text{Average inventory/inventory}}$$

$$= \frac{3,000,000}{300,000} = 10$$

$$\text{Industrial average} = 9 \text{ times}$$

ESO's turnover of 10 compares favourably with an industry average of 9 times. This suggests that the company does not hold excessive stocks of inventory. The higher the stock, the more efficient the stock management of the firm.

The use of this tool may be misleading because the picture at a particular time may not be representative of the whole year. Example, some companies take stock when the stock level is lowest and average given may not be available to them.

b) **Average Collection Period:** This is a measure of the accounts receivable. It measures the speed with which customers pay their bills. It is computed in two steps:

i) Annual sales are divided by 360 to get the average daily sales.

ii) Daily sales are divided into account receivable to find the number of days sales tied up in receivables. This is defined as the average collection period because it represents the average length of time that the firm must wait after making sales before receiving cash.

For JESO's Sales per day $= \dfrac{3,000,000}{360} = 8,333$

Average collection paid $= \dfrac{Receivables}{Sales\ Per\ Day} = \dfrac{200,000}{8,000}$

$= 24$ days

Industry average $= 20$ days.

This shows that customers on the average are not paying their bills on time since an average collection period of 24 days for the company is slightly above the 20-day industry average.

Decision based on the result of this analysis may be misleading because the industry average may be below, but the company is in actual performance receiving their bills on time. Therefore, a visit to the company by the analyst is very crucial.

(c) **Fixed Asset Turnover Ratio:** This measures the turnover of plant and equipment.

Fixed Asset Turnover Ratio $= \dfrac{Sales}{Net\ Fixed\ Assets}$

$= \dfrac{3,000,000}{1,3000,000} = 2.3$ times

Industry average $= 5.0$ times

The 2.3 times of the company compares poorly with the industry average of 5 times indicating that the firm is not using its fixed assets as high a percentage of capacity as are the other firms in the industry.

The use of this may lead management into decision that will increase the company's assets capacity utilization, but if the assets used in the calculation are obsolete, every effort will be futile except management is alert to the technological changes.

(d)   Total Asset Turnover: This measures the turnover of all the firm's assets.

JESO's total asset turnover = Sales = $\dfrac{3,000,000}{\text{Total Assets}}$ = $\dfrac{3,000,000}{2,000,000}$

= 1.5 times

Industry average = 2.0 times

This implies that the company is not generating a sufficient volume of business for the size of its assets investment when compared with other firms in the industry.

The use of this tool may be spurious because some items in the fixed assets component of the total assets do not contribute in the generation of sales of the firm. So use of total assets will mean inclusion of assets that do not have relationship with sales.

(iv)   **Profitability Ratios**: Profitability is net result of a large number of policies and decisions. Thus, profitability ratios measure the entire firm. That is, management's overall effectiveness as shown by the return generated on sales and investment. The ratios are:

(a)   **Profit margin on sales**   -

This measures the profit per Naira of sales computed thus:

Profit margin = $\dfrac{\text{net profit after taxes}}{\text{sales}}$ = $\dfrac{120,000}{3,000,000}$

= 4%

industry average = 5%

JESO's profit margin is somewhat below the industry average of 5%, indicating that the firm's sales prices are relatively low or that its cost are relatively high or both.

This tool may generate a biased conclusion if similar industries with the same characteristics are not compared in the analysis. Example, similar firm with different capital structures will arrive at different results.

(b)   **Return on Total Assets Ratio:**

This measures the return on total investment (ROI) in the firm.

Return on total assets = $\dfrac{\text{profit after taxes}}{\text{Total assets}}$

= $\dfrac{120,000}{200,000}$ = 5%

Industry average = 10%

6% return is well below the 10% average for the industry indicating poor performance.

The use of this ratio is defective because there is nothing static in the denominator. That is fixed assets changes overtime and therefore conclusion based on such calculation may be misleading.

Return on Networth: This measures the rate of return on stockholder's investment.

$$\text{Return on networth} = \frac{\text{Net Profit After Taxes}}{\text{Networth}}$$

$$= \frac{120,000}{1,000,000} = 12\%$$

$$\text{Industry average} = 15\%$$

JO's 12% return is below the 15% industry average, indicating poor performance. Although it is far below as the return on assets.

Note: If income is defined as earnings before interest but after taxes then, the ratio are computed as follows:

$$\text{Profit margin ratio} = \frac{\text{EBIT -Tax}}{\text{Sales}}$$

$$\text{Return on assets ratio} = \frac{\text{EBIT - Tax}}{\text{Total Assets}}$$

$$\text{Return on networth} = \frac{\text{EBIT - Tax}}{\text{Networth}}$$

Dividend per shares: - This is derived by dividing the amount of dividend declared by the firm, by the number of shares held.

Payout Ratio: This measures the proportion of earnings that is paid out as dividends. Thus:

$$\text{Payout ratio} = \frac{\text{Dividend}}{\text{Earnings per share}}$$

Experience has shown that financial managers deemphasize cutting down dividends because of shortfall in earnings. And so to play safe, they, most times, recommend the setting of a low average payout ratio.

When earnings fall unexpectedly, the pay-out ratio is likely to rise temporarily. Likewise, if earnings are expected to rise next year, management may feel that it can pay slightly more generous dividends.

If management decides to plowback part of the earnings not paid as dividends, the proportion of earnings plowed back into the business

$$= \quad 1 \text{ - payout ratio}$$

$$= \quad \frac{\text{Earnings - Dividend}}{\text{Earnings}}$$

If you multiply the result of this by the return on equity, you can see how rapidly the shareholders' investment is growing as a result of plowback.

Thus:

Growth in equity from plowback

$$= \quad \frac{\text{Earnings - Dividend}}{\text{Earnings}} \quad \times \quad \frac{\text{Earnings}}{\text{Equity}}$$

(vi)   Valuation Ratio: Valuation ratios are the most comprehensive measures of performance for the firm, as they reflect the combined influence of risk ratios - the liquidity and leverage ratios, and return ratios - the activity, profitability and growth ratios. They combine accounting and stock market data. They include:

(a)   Price to earnings ratio -

This ratio indicates the number of years it would take to recover the share price out of earnings of the firm. It is a common measure of the esteem in which the company is held by investors. It is calculated thus:

$$\text{P/E ratio} \quad = \quad \frac{\text{Market price of ordinary shares (MPS)}}{\text{Earnings per share figure (EPS)}}$$

Some obvious absurdities are increased in interpreting the implication of P/E ratio. For instance company could sustain a loss during the accounting period, which would imply a negative EPS would, however, be wrong to expect MPS and/or the P/E ratio to be negative during the period.

(b)   Market to book value ratio:

This ratio indicates the value the financial markets attach to the management and the organisation the company as a going concern.

$$\text{Market-book value ratio} \quad = \quad \frac{\text{Market value}}{\text{Book Value}} \quad \text{or} \quad \frac{\text{Stock price}}{\text{Book value per shares}}$$

Book value per share is the stockholder's book equity (networth) divided by the number shares outstanding.

The result, which is in percentage, can be interpreted to mean, for instance, if we have 84%, it means that the firm is worth 16% less than part and present shareholders have put into it.

Tobin'sq: This ratio is named after an economist, James Tobin. Tobin'sq or 'q' is the ratio narket value of company's debt and equity plus the current replacement cost of its assets.

$$q = \frac{\text{market value of assets}}{\text{estimated replacement cost.}}$$

This ratio is like the market to book value ratio but some differences abound. The **numerator** q includes all the firm's debt and equity securities, not just its common stock. The denominator udes all assets not just the firm's networth. All these assets are not entered at original cost, as wn in the company's books, but at what it would cost to replace them.

If q is greater than 1 (i.e. when capital equity. is worth more than it costs to replace), there is ntive to invest but they will stop investing when q is less than one (i.e. when equity is worth less n its replacement costs). When q is less than one, it may be cheaper to acquire assets through ger rather than buying new assets.

ONCLUSIONS

Financial analysis is a *sine-qua-non* in firm's financial management efforts. Principally, the ious tools for financial analysis and control discussed in the chapter, are important in evaluating the formance of a firm and consequent decision on whether or not to invest in a given asset(s). But e must be taken of the criticisms mentioned and other general limitations like the accuracy of the a used in the analysis, comparison between one industry and another, historic use of financial ements which are not indicators of the future, and so on.

The financial manager (analyst) will not naturally avoid use of the various tools discussed but achieve his objective and desired result, he should avoid applying any rigid and inflexible standards his analysis rather application of combinations of these tools is highly encouraged.

300

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