

TITLE

FINANCIAL RATIO ANALYSIS, A TOOL FOR MANAGERIAL CONTROL

A CASE STUDY OF

JOS INTERNATIONAL BREWERIES PLC JOS

BY

AKU, DAVID

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DECLARATION

I hereby declare that this research project is original and a product of my research findings and that to the best of my knowledge, this work has never been published or presented in any form anywhere for any degree prior to this study.

All materials used or consulted have been acknowledged accordingly.

AKU, DAVID
STUDENT

 5/1/93
SIGNATURE AND DATE

CERTIFICATION

This Project entitled Financial Ratio
Analysis, A Tool for Managerial Control:
A Case study of Jos International breweries
PLC meet the regulation governing the
degree of master of Business Administration of
Ahmadu Bello university, Zaria is approved
for its contribution to knowledge.

A.M. Abu-Abdissamad  20/1/1993
SUPERVISOR SIGNATURE DATE

EXTERNAL EXAMINER SIGNATURE DATE


HEAD OF DEPARTMENT SIGNATURE DATE

 26/1/96
DEAN POST GRADUATE SCHOOL SIGNATURE DATE

DEDICATION

To: ELIZABETH OBUTUK

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ABSTRACT

For the last three decades or so, the use of mathematical techniques in management has been gaining grounds. One of such techniques in use in the field of commerce and management is "Financial Ratios".

The objective of this study was to investigate the validity of financial ratio analysis as a performance evaluation technique. The study was concentrated on Jos International Breweries PLC over a three year period - 1988 - 1990. The company's financial statements for the period under study were subjected to ratio analysis to see if ratios can give the financial analyst advance warning as regards the future financial position of a company.

The procedure followed for collecting data for this project was through the primary and secondary sources of information. The primary sources of information were the audited financial statements of the company for the years 1988 - 1990, and personal interview of some key staff of the finance division.

The secondary sources of information was through previous write-ups on financial ratios - journals, magazines, newspapers and text books.

Having analysed the data collected, it became clear that financial ratios can reveal to a manager areas of financial difficulties thereby enabling him to take control measures.

The conclusion is that financial ratios are one of the most accurate and reliable evaluative tools available to the manager in assessing the future prospects and difficulties of his/her company.

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1. INTRODUCTION

1.1 GENERAL BACKGROUND

There are several business activities of an enterprise, among these are: production, finance, marketing, etc. Out of these activities finance plays an important role, it raises capital funds, and use them to generate income and pays returns to the suppliers of funds. Finance can therefore be defined as the effective and efficient acquisition and utilization of funds for the attainment of organizational objectives. The job of the financial manager therefore is an important one and his responsibilities involves taking decisions as regard investments the firm should make, how these investments should be financed and how the existing resources of the firm should be managed, so that the maximum benefit could be derived.

To be able to carry out these functions in the most effective and efficient manner, the financial manager needs some tools of analysis. One of the tools available to the financial manager is "financial ratio analysis". Financial ratio analysis aims at identifying the weakness in the firm's financial health that could lead to future problems and to determine any strengths the firm might capitalise upon. A financial manager wants to know through financial analysis whether the firm can reasonably afford to borrow all or part of funds needed to finance a planned expansion, find out causes of changes in operating income relative to its competitors, etc. Financial ratio analysis is therefore used as a yard stick to evaluate the financial position and performance of a firm.

Accounting figures as reported in the various financial statements do not provide adequate understanding of the performance and the actual financial position of a firm until when they convey meaning related to specific information. Take for instance, a firm that declares a N20,000 net profits. This figures may look impressive, but the firm's performance can be good or bad only when the net profit figure is related to the firm's investment.

Financial ratio analysis establishes the relationship between the items of the balance sheet and profit and loss account. Financial ratio analysis can alternatively, be undertaken by outsiders that is, investors who wish to determine the credit worthiness or investment potentials of the firm. For example, trade creditors are interested in the fact that the firm should be able to meet their claims within a short period of time. Their analysis therefore, will focus on the firm's liquidity position. On the other hand, the suppliers of long-term funds will be interested in the firm's long-term solvency and survival, hence they analyse the firm's profitability over time. That is, the firm's ability to generate cash to be able to pay interest and return their claims. Shareholders on their part are interested in the firm's earnings. They have more confidence in those firm's that show steady growth in earnings and therefore, they concentrate on the firm's present and future profitability. Financial ratios serve as useful tools to managers and investors in assessing the financial health of firms.

A single ratio itself does not indicate favourable or unfavourable condition until it is compared with some standards.

Some of the standards for comparison are:

- (a) Ratios computed from the past financial Statement of the same firm.
- (b) Ratios developed using the projected or pro-forma financial statements of the same firm.
- (c) Ratios of some selected firms, especially the most progressive and successful in the same industry, within the same period.
- (d) Ratios of the industry which the firm belongs.

1.2 STATEMENT OF THE PROBLEM

Managers in Nigeria are operating under a very volatile economic situation. Because of the dynamic nature of our economy, decisions taken by managers should be based on hard facts instead of guese work and hunches as is the case today.

Several managers have realised too late that their firms are heading for liquidation as a result of financial problems which should have been foreseen if some evaluative techniques for forecasting future trends had been employed.

A good number of managers make financial decisions based on information provided in financial statements, but

financial statements information will not provide a clear idea as to future trends. For example, the gross profit figure in the profit and loss statement could only be meaningful for decision making only when compared with the assets employed in generating such profits.

This study is intended to find out whether the firm under study employs financial ratio analysis in forecasting the firm's financial position. If ratios are employed, to what extent has the firm been successful in their application. If not, what has been the effect of non-application of ratio analysis on the decision making process vis-avis efficient and effective financial planning and control.

1.3 SIGNIFICANCE OF THE STUDY

Ratio analysis is one of the most powerful tools of the financial analyst. The aim of calculating ratios is to appraise the financial health of the firm in order to know whether the firm has an actual or a potential financial problem, since decisions currently being made might relieve or accentuate the problem. Therefore, the manager must diagnose the financial situation of the firm from time to time in order to foresee financial problems in advance and take remedial actions before the problems become uncontrollable.

Ratio analysis is also used by various groups to determine a particular financial characteristic of the firm in which they are interested. For example, the ability of the firm to meet its current financial obligations, the extent to which the firm has used its long-term solvency by borrowing funds; the efficiency with which the firm is utilizing its various assets in generating sales revenue, and the overall operating efficiency and performance of the firm.

In security analysis, the major focus is on the long-term profitability, therefore the security analyst will definitely be concerned with the efficiency with which the firm utilizes its assets and the financial risk to which the firm is exposed.

Ratio analysis therefore, serves as a convenient, consistent, and disciplined approach to financial analysis of firms.

1.4 PURPOSE OF THE STUDY

Managers must be effective and efficient in running their organizations if they are to succeed, thus predicting the present and future performance of their organizations is important. The purpose of this study therefore, is to see how effective financial ratio analysis is in predicting to managers areas of financial problems to enable them plan the future of their organizations with confidence.

1.5 SCOPE OF THE STUDY

The study covers the period between 1988 and 1990. It seeks to evaluate and show how financial ratio analysis can serve as tools of control in the hands of managers. The study will cover only the major four areas of ratio analysis, that is, liquidity ratios, profitability ratios, efficiency ratios, and leverage ratios.

1.6 RESEARCH METHODOLOGY

1.6.1 SAMPLE SELECTION

This research work involves, a study of the financial statements of Jos International Breweries PLC, for a three year period - 1988 to 1990. The company was selected at random after considering the following factors:-

- (i) Time.
- (ii) Cost and availability of data.

1.6.2 DATA COLLECTION

All the data used for this study were obtained from the annual audited accounts of Jos International Breweries PLC, for the years 1988, 1989 and 1990. Some key staff of the Finance Division were also interviewed. Journals, magazines and newspapers were also used as secondary sources of information.

1.6.3 RATIO SELECTION AND COMPARISON

A total of twelve ratios have been used for this study under the following four groups:

- (a) Liquidity Ratios
 - (i) Current ratio
 - (ii) Quick ratio.

- (b) Profitability Ratios
 - (i) Profit margin on sales
 - (ii) Return on total assets
 - (iii) Operating ratio

- (c) Efficiency Ratios
 - (i) Inventory turn over
 - (ii) Average collection period
 - (iii) Fixed assets turn over
 - (iv) Total assets turn over

- (d) Leverage Ratios
 - (i) Debt to asset ratio
 - (ii) Coverage ratio
 - (iii) Debt-equity ratio

The type of ratio comparison used in this study is the time series approach.

1.7 LIMITATION OF THE STUDY

Some of the limitations encountered during the course of carrying out this study are as follows:-

- (i) Nigeria after thirty two years of independence is yet to develop industry ratios with which a company's ratios could be compared. Comparisons between the company's ratios with that of the industry has therefore not been possible.

- (ii) Financial ratios have their limitations which inevitably apply to this study. Therefore, the ratios analysed must be interpreted with caution.
- (iii) Time probably, constituted the most serious limiting factor, as the study had to be concluded within a short period of time hence, the analysis of only three years financial statements - 1988 - 1990.

CHAPTER TWO

LITERATURE REVIEW

2.1 AN OVER-VIEW OF FINANCIAL RATIOS

Accounting information summarises the economic performance and situation of an enterprise, and in order to make use of the information, the user needs to analyse and interpret the information. The first stage in analysis is the development of a systematic review of the accounting data. This is done through the use of ratio analysis. The ratios are designed to show relationships between financial statement accounts in order to measure the company's performance.

Ratio analysis serves as a technique by which the performance of a company's management can be analysed. Thus performance evaluation is not measured by profit alone, it is just as important to avoid jeopardising profit potentials. Perhaps companies are like athletes who can only keep winning races if they keep fit. It is, therefore, a manager's responsibility to ensure that his company keeps fit by ensuring that, among other things, its various financial proportions are kept healthy, that is, its debts and stocks are not excessive and that the firm is not vulnerable as regards liquidity, etc.

The development path of ratio analysis for creditor, and for managerial purposes are different. Credit analysis emphasize measures of ability to pay whereas managerial analysis emphasize profitability measures. It was towards the end of the 19th century that financial ratios were

considered as devices for short-term credit analysis. Recent studies however, have indicated that financial ratios can be used for the evaluation of a firm's performance over a wide range of time.

In addition, available evidence suggests that ratios do have predictive value at least in respect to financial difficulties. From the evidences available, it can therefore be concluded that financial ratios are important analytical, planning and control tools.

2.2 TYPES OF RATIOS

Financial ratios are basically grouped into four main categories viz:

- (a) Liquidity ratios
- (b) Profitability ratios
- (c) Efficiency ratios
- (d) Leverage ratios

2.2.1 LIQUIDITY RATIOS

Liquidity measures of a firm are of great importance to the analyst. He is interested in knowing whether the firm has an actual or a potential liquidity problem and what effects current decisions would have on the firm's liquidity position.

These ratios measure the firm's ability to meet its short-term obligations when they fall due. Liquidity ratios are classified into two categories - current ratio and quick or acid test ratio.

(i) CURRENT RATIO

This is mathematically expressed as $\frac{\text{current assets}}{\text{current liabilities}}$.

This ratio measures the extent to which the claims of short term creditors are covered by assets that can easily be converted to cash within a short period, usually twelve months. A ratio of 2:1 is favoured by many authors. The manager must be interested in current ratio because a low current ratio is an indication that the firm has not been able to meet its current obligations as they fall due. This kind of situation could spell doom for the firm as it might result in bad credit rating or law suit, resulting in the closure of the company. It is the most commonly used measure of short-term solvency.

(ii) QUICK OR ACID TEST RATIO

This ratio is computed by deducting inventories from current assets and dividing the remainder by current liabilities.

$$\frac{\text{Current Assets} - \text{Inventories}}{\text{Current Liabilities}}$$

This ratio measures the firm's ability to pay off short term obligations without relying upon the sale of its inventories. Inventories are deducted because they are typically the least liquid of a firm's current assets and hence they are the assets on which losses are most likely to occur in the event of liquidation because they are usually disposed off at distressed prices.

The ratio concentrates on cash, marketable securities and receivables in relation to current liabilities and thus provides a more penetrating measure of liquidity than does the current ratio. It is used in predicting business failure and bond rating.

2.2.2 PROFITABILITY RATIOS

Profitability ratios serve two important purposes:

- (i) They inform management of how much of each naira sales they have been able to convert into profit, and
- (ii) How much profit they were able to earn on each naira of assets they had under their control.

They are divided into two categories:-

- (i) Profitability in relation to sales, and
- (ii) Profitability in relation to investment.

Profitability in relation to sales ratios are used to assess the capability of the firm's management to control the various expenses involved in generating sales. These ratios are:

(i) Gross Profit Margin:

This ratio is calculated by dividing gross profit by net sales.

$$\frac{\text{Gross Profit}}{\text{Net Sales}}$$

Gross Profit margin measures the total margin available to cover operating expenses and yield a profit. It is expressed as a percentage.

(ii) Net Profit Margin:

This ratio is calculated by dividing net profit after tax by sales.

$$\frac{\text{Net Profit after tax}}{\text{Sales}}$$

This ratio measures after tax profit per each naira of sales. Below par, profit margin may indicate that the firm's prices are relatively low or that its costs are relatively high or both. The ratio tells us the relative efficiency of the firm after taking into account all expenses and income taxes, but not extra ordinary charges.

Ratios that measure profitability in relation to investment attempts to equate the profits realized with the invested funds used to generate those profits. They attempt to assess the overall effectiveness of the firm's management. These ratios are:

(i) Return on Total Assets

This ratio measures the return on total investment in the firm. It is given by $\frac{\text{Profit after taxes}}{\text{Total Assets}}$

It is sometimes more appropriate to compute this ratio as,

$$\frac{\text{Profit after taxes} + \text{Interest}}{\text{Total Assets}}$$

This is because assets are financed by creditors as well as shareholders, therefore it is accurate to measure the productivity of assets by the return provided to both classes of investors.

(ii) Return on ordinary shares

The ratio of the net income after taxes and preferred dividends to common equity measures the return on common equity or ordinary shares (ROE), or the rate of return on the stock holders' investment. It is computed by

$$\frac{\text{Profit after tax} - \text{Preferred dividends}}{\text{Ordinary Shares.}}$$

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$$\frac{\text{Profit after tax} - \text{Preferred dividends}}{\text{Ordinary Shares.}}$$

The higher this ratio, the greater the profitability and the faster funds are recovered by the stock holders.

(iii) NET Operating Profit Rate of Return

This is also known as the basic earning power ratio. It is calculated by dividing earnings before interest and taxes (EBIT) by total assets.

$$\text{Basic Earning Power Ratio} = \frac{\text{EBIT}}{\text{Total Assets}}$$

This ratio indicates the power of the firm's assets to generate operating income. It is useful for comparing firms in different tax situations and with different degrees of financial leverage.

2.2.3 EFFICIENCY RATIOS

This category of ratios provide the basis for assessing how effectively the firm is using its resources to generate sales. Fixed assets, stock, receivables, and so on, are the resources of a firm and each is compared with sales to determine the rate at which it is turned over a year. Some of the ratios under this category are:

- (i) Inventory turnover
- (ii) Average collection period
- (iii) Fixed assets turnover
- (iv) Total assets turnover

(i) INVENTORY TURNOVER RATIO

This is also called inventory utilization ratio. It is defined as sales divided by inventories of finished goods.

$$\text{Inventory turnover} = \frac{\text{Sales}}{\text{Inventory of Finished Goods}}$$

This ratio measure the effectiveness or efficiency with which the firm is managing its investment in inventories. It reflect the number of times the firm turnover (replace) its inventories in a year. When compared with industry average, it indicates whether the firm has excess or inadequate finished goods inventories.

Generally, the higher the inventory turnover, the more efficient the inventory management of the firm. However, a high inventory turnover could be secured by lowering prices or by deliberately keeping inventory level low.

(ii) AVERAGE COLLECTION PERIOD

The average collection period (ACP) is used to appraise accounts receivable, and it is computed by dividing average daily sales into accounts receivable to find the number of days receivables are tied up. Thus, average length of time that the firm must wait after making a sale before receiving cash.

$$\begin{aligned} \text{Average collection period} &= \frac{\text{Receivable}}{\text{Average Sales per day}} \\ &= \frac{\text{Receivable}}{\text{Annual Sales}/360} \end{aligned}$$

We can also think of this ratio in terms of the number of daily credit sales contained in accounts receivable.

(iii) FIXED ASSETS TURNOVER

This measures the efficiency with which the firm utilizes its investment in fixed assets. This is calculated by dividing sales by net fixed assets (i.e. the depreciation value of fixed assets).

$$\text{Fixed assets turn over} = \frac{\text{Sales}}{\text{Net fixed assets.}}$$

A firm acquires plant and machinery and other productive fixed assets for the purpose of generating sales; therefore the efficiency of fixed assets should be judged in relation to sales.

(iv) Total assets turnover.

The total asset turnover ratio indicates how many naira in sales the firm squeezes out of each naira it has invested in assets.

$$\text{Total asset turnover} = \frac{\text{Sales}}{\text{Total assets.}}$$

Since total assets is simply fixed assets plus current assets, we can use our turnover ratios for both total and fixed assets to analyse the efficiency with which the firm manages its investment in current assets.

2.2.4 LEVERAGE RATIOS

Financial leverage results when a firm obtains financing for its investment from sources other than from the firm's owners. Financial leverage therefore, results from the firm's use of debt financing, etc. This type of financing has a fixed cost for their use. Financial leverage seeks to answer the following questions:

- (i) How has the firm financed its assets ?
- (ii) Can the firm afford the level of fixed charged associated with its use of non-owner supplied funds such as debt interest and principal repayment ?

Leverage ratios seek to answer these and other related questions.

Leverage ratios aim at analysing the long-term liquidity of a firm that is, the firm's ability to meet long-term obligations.

The extent to which a firm uses debt financing has three important implications:

- (i) By raising funds through debt, the owners can maintain control of the firm with limited investment.
- (ii) Creditors look to the equity, or owner supplied funds, to provide a margin of safety. If the owners have provided only a small proportion of total financing, then the risks of the enterprise are borne mainly by its creditors.
- (iii) If the firm earns more on investments financed with borrowed funds than it pays in interest, then the return on the owners' capital is magnified or "leveraged". On the other hand, should the return earned fall below what the firm pays in interest, then the common stock holders must make up the difference out of the return on their invested funds.

Financial leverage ratios include:

- (i) Debt to asset ratio

This ratio measures the extent to which borrowed funds have been used to finance the firm's operations. In other words, this ratio measures the percentage of total funds provided by creditors.

This ratio is calculated by dividing total debt by total assets.

$$\text{Debt ratio} = \frac{\text{Total debt}}{\text{Total Assets}}$$

Debt is defined here to include both current liabilities and long-term debt. Creditors are interested in low debt ratios since the lower the ratio the greater the cushion against creditors' losses in the event of liquidation. The owners on the other hand prefer high leverage, either to magnify earnings or because selling new stock will mean giving up some degree of control.

(ii) Debt-Equity Ratio

This is computed by dividing the total debt of the firm (including current liabilities) by net worth.

$$\frac{\text{Total debt} \times 100}{\text{Net worth}}$$

It indicates the relationship between the long term funds provided by creditors and the funds provided by the firm's owners. Firms with large amounts of fixed assets and stable cash flows typically have high debt-equity ratios, while less capital intensive firms normally have lower debt-equity ratio.

(iii) Debt-to-total Capitalization

This ratio indicates the extent to which the firm has used long-term debt in its permanent financing. Total capitalization represents the sum of all the permanent sources of financing used by the firm, including long-term debt, preferred stock, and common equity. This ratio is often called "Capital Structure" ratio. It is computed using the following formula:

$$\frac{\text{Long-term debt}}{\text{Total Capitalization}}$$

(iv) Times Interest Earned:

The times interest earned ratio indicates the firm's ability to meet its interest payments out of its annual operating earnings. The ratio measures the number of times the firm is covering its interest. The ratio is calculated thus:

$$\frac{\text{EBIT}}{\text{Interest charges}}$$

A firm that fails to meet its interest payment early is a potential candidate for bankruptcy. A major short coming of this ratio is that, net operating income or EBIT does not reflect the total amount of earnings available to meet interest and other finance-related charges. For example, net operating income understates the amount of income available to meet finance charges by an amount equal to the firm's depreciation expense for the period.

(v) Fixed charges coverage:

This ratio expands upon times-interest-earned to include the firm's annual long-term lease obligations. The purpose of this ratio is to compare the cash flow (from net operating income) available to meet fixed financial commitments against the cash flow requirements of these fixed obligations. The fixed charges are defined as interest, lease payments, preferred dividends, and debt principal repayments. The formula for computing this ratio is:

$$\begin{array}{l} \text{Fixed Charges} \\ \text{Coverage} \end{array} = \frac{\text{Net operating income} + \text{Lease expense} + \text{depreciation}}{\text{interest} + \text{lease expense} + \text{preferred dividends} \div (1-\text{marginal tax rate}) + \text{principal payments} \div (1-\text{marginal tax rate})}$$

2.2.5 TYPES OF RATIO COMPARISONS

There are basically two ways in which financial ratios can be used. These are:

- (i) Time series or trend analysis
- (ii) Cross-sectional approach

(i) Time Series or Trend Analysis

This is a method which consist of comparison of similar ratios for the same firm from previous financial statements. This enables the firm's management to determine whether it is progressing as planned or not. Developing trends can be done by using multi-year comparative analysis, a knowledge of which assists the firm's management in planning future operations. The reasoning behind trend analysis is that the firm must be evaluated in relation to its past performance over time to enable management to predict future performance.

(ii) Cross-Sectional Approach

This method compares the financial ratios of different firms that are considered comparable in their general characteristics to the subject firm over the same period of time.

This form of comparison is usually done to find out how well a firm has perform in relation to its competitors. Often the performance of the firm is compared with at least the three top firms in the industry. This type of comparison allows the firm to uncover major operating differences which if changed, will increase the firm's efficiency.

2.3 EVIDENCES OF THE PREDICTIVE POWER OF FINANCIAL RATIOS

Since the emergence of, and development of financial ratios, various researches have been conducted on the predictive powers of financial ratios. Some of these are: Financial ratios and corporate failure, financial ratios and corporate risk, financial ratios and bond rating, financial ratios and rapid growth and profitability of firms, and the usefulness of financial ratios to investors in common stock.

2.3.1 FINANCIAL RATIOS AND CORPORATE FAILURE

A number of empirical studies have been undertaken that test the predictive power of financial ratios, particularly their ability to predict failure. These studies can be divided into two categories. The first category deals with studies carried out in relation to the predictive power of individual ratios based on either the ratio's trend or its magnitude. The second category of studies of the predictive ability of financial ratios is based on a multi-variate approach. Both these approaches have been able to use ratio(s) to predict the continuation or demise of a firm.

The works of the following researchers in the first category are taken into consideration. Fitzpatrick (1931 and 1932), Smith and Winakor (1935), Charles L. Merwin (1942). Winakor and Smith studied a sample of 183 firms which had experienced financial difficulties during the period of 1923-31 and had failed by 1931. They analysed the prior ten year trend of the means of 21 ratios and concluded that the ratio of net working capital to total assets, whose decline began ten years before the occurrence of financial difficulties, was the most accurate and steady indicator of failure. Fitzpatrick followed a different approach by analysing the prior three-to-five year trends of thirteen ratios of twenty firms that had failed during the period 1920 - 29. He studied the data on a case-by-case method of analysis and followed it up by comparative analysis of a matched sample of nineteen successful firms. His conclusion was that all the ratios predicted failure to some extent through declining trends, but his best predictors were the net profit to net worth ratio and the net worth to total debt ratio.

Both Winakor and Smith, and Fitzpatrick studies were culminated in 1942 in Merwin's study of 939 firms in the period 1926 - 36. He divided his sample into two groups, "Continuing" (successful) and "discontinuing" (unsuccessful) firms, and analysed the prior six-year trend of a large, unspecified number of ratios of each group. He accomplished this by comparing industry mean ratios of the discontinuing firms with "estimated normal" ratios, which were estimates of what the discontinuing firms ratios would have been had they maintained

the same average ratios as the continuing firms. His conclusion was that three ratios were very sensitive predictors of discontinuance, up to as early as four to five years in some instances. The ratios were net working capital to total assets, net worth to total debt, and the current ratio, which all exhibited declining trends before discontinuance and were also below the estimated normal ratios.

The second category of studies relied on the statistical technique of discriminant analysis. Researchers like Beaver (1966) and (1968), Altman (1968), Daniel (1968), Deakin (1972), Edminister (1972), Wilcox (1973), and Altman and others (1977) all conducted studies on the predictive power of ratios using discriminant analysis.

Beaver (1966) considered a sample of seventy nine relatively large firms that failed, and for each of these firms, another firm was selected that did not fail but was in the same industry and was approximately the same size as the firm that failed. The data collected for the non-failed firms were for the same years as those for the failed firms. These samples were used to test the predictive ability of thirty financial ratios. The mean values of the ratios for the two samples were compared over the five-year period prior to failure. It was found that the mean ratio for the failed firms differs significantly from that for the non-failed firms. It was also discovered that the mean ratio for the failed firms deteriorated markedly as failure approached. In addition to

the mean values, Beaver tested the samples using a form of discriminant analysis and then went on to analyse the evidence using likelihood ratios. Although not all of the financial ratios examined predicted failure equally well, many showed excellent predictive power. In a companion study, Beaver (1968) investigated the ability to predict failure from the changes in market prices of stocks. He found that the median market price of the failed firms declined at an increasing rate as failure approached, relative to that for the non-failed firms. He found out that the largest price decline occurred in the final year. He therefore, concluded that investors adjust stock prices to the deteriorating condition of failing firms. Moreover, he found the evidence to be consistent with investors assessing the likelihood for failure on the basis of financial ratios.

Altman (1968), in a similar study employed multi-discriminant analysis to predict bankruptcy, using various financial ratios. These five ratios were then used to discriminate between bankrupt and non-bankrupt firms, using data from one to five years prior to bankruptcy. This method was able to forecast failure quite well up to two years before bankruptcy. Altman developed a discriminant function with a score such that all firms with a score of less than 1.81 were classified bankrupt and all firms with scores of more than 2.99 were classified as non bankrupt. Those firms that fall in between the two scores were considered as grey area, where clear classification was not possible. He had used a "Z" score in his discriminant analysis

and the score was computed as follows:

$$Z = .012 X_1 + .014 X_2 + .033 X_3 + .006X_4 + .999X_5$$

Where Z = overall score

X_1 = working capital to total assets

X_2 = Retained earnings to total assets

X_3 = EBIT to total assets

X_4 = Market value of equity to book value to total debt.

X_5 = Sales to total assets.

Deakin, E. B. (1972) used a paired sample of thirty two failed and non-failed firms over the 1964 - 1970 period. Using discriminant analysis in conjunction with fourteen financial ratios, found that bankruptcy could be predicted with a fairly high degree of accuracy as far ahead as three years.

Altman, Haldeman and Harayanan (1977) extended the original Altman model and updated its application to the 1969 - 1975 period. They used a sample of fifty-three failed and fifty-eight non-failed firms including retailing firms. On the basis of discriminatory ability, twenty seven original variables were reduced to seven:

- (i) The return on asset ratio,
- (ii) the stability of earnings,
- (iii) the interest coverage ratio,
- (iv) the retained earnings to total assets ratio,
- (v) the current ratio,
- (vi) the common equity to total capital ratio, and
- (vii) the size of total assets.

Using a linear discriminant model, the researchers were successful in predicting bankruptcy up to five years prior to failure. Their model predicted failure with 96% accuracy rate one year before failure, to 70% five years before failure.

Moyer (1977) stated Altman's discriminant function of five ratios parameter on a newly generated data (1965 - 1975) and found that the predictive ability of the model has dropped considerably. He therefore concluded that caution was necessary when applying the original Altman model parameters to new data. However, he found that when the model's parameters were re-estimated, using a stepwise routine that excluded superfluous variables, predictive accuracy was high. He also found the model to be a better failure predictor than other models.

Daniel (1968) in his study, employed simple correlation, factor analysis and step wise regression to select financial statement data and ratios which best correlated with failure and non failure as the dependent variable. The discriminant function was to have considerable power in identifying failing firms.

Edmister (1972) tested the predictive ability of financial ratios on small business failure. Similar to the others, he employed multiple discriminant analysis and found it to be an accurate predictor of failure if ratios were averaged over a three year span. He concluded that current assets to current liabilities, working capital to sales, net

income plus depreciation minus a mortization to current liabilities, net worth to sales, current liabilities to net worth, inventory to sales, if incorporated in discriminant function predicted failure. However, unlike the findings of Beaver and Altman, an analysis based upon one year's financial statement was not enough to discriminate failing from non failing firms. Consecutive financial statements were necessary for the successful analysis of small business failures.

2.3.2 FINANCIAL RATIOS AND CORPORATE RISK

Most of the studies made in the area of prediction of corporate risk by means of financial ratios were conducted in the 70s. The following studies are considered:

Orgler (1970) developed a credit scoring model for commercial bank loans using twenty one ratios selected from all but valuation ratios. He discovered that good loans could be predicted with some degree of success.

Altman et al (1974) used discriminant analysis on forty one ratios, and using data on 134 firms, they established the model to be a useful predictor of risky loans (loans with repayment problems).

Falk and Heintz (1975) analysed forty one industries for two years (1971 - 72) using average total assets to sales, total assets to working capital, and average accounts receivables to sales, as a complete index for each of the industries. Their aim was to analyse the characteristics of

each industry as reflected in its financial ratios as to be able to rank them according to risk. They were successful to some extent in ranking a number of industries based on their model.

2.3.3. FINANCIAL RATIOS AND BOND RATING

Hickman (1958) studied the outcomes of corporate bonds issued during 1900 - 1943, and found that the time-interest earned ratio and the net profit to sales ratio were useful predictors of defaults on bond issues, whether used jointly or separately. The firms with higher ratios went into default less frequently.

Soulmier et al (1958) studied the United States Federal Lending and Loan Insurance for the period 1934 - 51 and concluded that firms with very low current ratios and net worth to total debt ratios were more likely to default on loans. They also found that firms with deteriorating current ratios prior to borrowing defaulted about twice as often as those with stable or increasing ratios.

The evidence, as regards bank credit difficulties, is varied. In one study, Moore and Atkinson (1961) examined the aggregate data involving changes in bank credit use and financial ratios during 1955 - 57. They found that firms with higher current ratios and working capital to total assets, net worth to total debt, and net profits to net worth ratios increase their use of credit more than other firms.

Wojinlower (1962) studied the quality of bank loans, and analysed those loans that were criticised by banks in 1957 from three federal reserve districts in the U. S. He showed that the criticised loans invited firms with low average current ratios, and net working capital to total assets ratios in all the industries and net worth total debt ratio was below average in two thirds of the cases.

Jen (1963) considered the availability of bank credit to a sample of small firms and indicated that the net profit to total assets and total debt to total assets ratios constituted credit principal determinants of credit availability.

Horrigan (1966) used regression ratings as dependent variables against the financial ratios of some selected companies. From this, he developed a model known as the multiple regression model. On the basis of this model, he predicted the top six bond classification of both Moody's standard and poor ratings. The prediction was about fifty two percent and fifty eight percent of standard and poor and Moody's rating respectively.

In a similar study, Pogue and Holdosky (1969) developed a regression model with dichotomous (0-1) percent variables so as to predict whether a bond should be classified as having Aaa or Baa rating. The model which succeeded in classifying a number of bonds had such variables as: net income to total assets, debt to total capital; co-efficient of variation to total assets, net income to interest, and net profits to assets. The analysis was however, limited to investment bonds.

Pinches and Mingo (1973) analysed 182 bonds for one year - 1967. Financial data were calculated on thirty five different variables. They employed factor analysis and M-group multiple discriminant analysis, and they developed a model consisting of six variables. Subordination (which represents the legal status of bonds), year of consecutive dividends issue size (this indicates that bond ratings and the size of bond issue are related), net income plus interest to interest coverage ratio, five years means of long-term debt or total assets and net income to total assets. The model grouped 182 bonds with 69.70 percent success of actual bond ratings by Moody's.

2.3.4 FINANCIAL RATIOS AND RAPID GROWTH AND PROFITABILITY FIRMS

Notable studies have been conducted in this area, both abroad and in Nigeria. Harrigan (1965) reported that Chudson in a study carried out in 1937 determined that some short-term liquidity and long-term solvency ratios were significantly different between profitable and unprofitable firms, with the profitable firms showing that higher ratios were not significantly different.

Jackendoff (1962) also found that financial ratios consistently and clearly distinguished between profitable and unprofitable firms - in the period of 1949 - 1955. The current ratio and working capital to total assets and net worth to total ratios of profitable firms were consistently higher but the relationship of asset turnover appeared to be inverse to size of the firm.

Hutchinson (1979) had the belief that the profit of small firms which go public is distinctive and that it changes over the period to floatation. He therefore, examined such firms by considering such factors as liquidity, profitability and using a sample of thirty three firms which obtained quotation from the London Stock exchange, between April 1968 and March 1973. In all, he analysed five ratios - working capital to total assets, EBIT to total assets, sales to total assets, retained earnings to total assets and equity to total debt. He found that liquidity though not stable increased return on investment, and asset turnover for growing firms. He concluded that high growth firms are less liquid, more profitable and less highly geared than slow growth firms.

Osaze (1981) in a study on financing rapid growth firms in Nigeria, discovered that ratios adequately discriminate between growing and non growing firms.

CHAPTER THREE

3.1 BRIEF HISTORY OF JOS INTERNATIONAL BREWERIES PLC

The Company was incorporated in Nigeria as a private company on 26th July, 1975. In 1977, an Investment agreement was entered into by Plateau State Government, the then owners of the company on one part and the Danish firm of A/S Cerekem International Limited (formerly Cerekem A/S) and the Industrialisation Fund for Developing Countries ("I F U") also of Denmark on the other part.

The primary objective was to establish a brewery to produce and market high quality lager beer with the brand name "ROCK"

The foreign partners-Cerekem and IFU, between them held 25% of the company's paid-up share capital between 1977 and 1991. In 1992, the company went public and offered for subscription 74,250,000 ordinary shares of 50k each.

The company operates from its brewing plant in Jos, Plateau State, with two installed bottling lines. Despite the fact that the company was incorporated in 1975, operation could not be started until 1979 with an installed capacity of 260,000 hectolitres of lager beer per annum. This capacity was increased to 575,000 hectolitres in 1980/81 and to 1,100,000 hectolitres, the present installed capacity, in 1982/83. In terms of bottles, the existing installed capacity is about 175 million bottles or 15 million cartons of 12 bottles of beer annually. The company is planning a further expansion programme to increase its brewing capacity to 2,000,000 hectolitres of beer per annum.

Its main business is the production and distribution of "Rock" brand of lager beer. However, it also brews and markets the "CLASS" brand of lager beer, a beer brewed with a high percentage of locally sourced raw material.

The company also integrated backward by establishing strategic subsidiary companies. The following is a list of the subsidiaries and their principal activities:

- (i) BARC Farms Limited - Is owned 100% by JIB PLC and has a staff strength of 453. The principal activities of the farm are: Crop production, poultry farming, cattle fattening and piggery.
- (ii) Pioneer Milling Company Limited - Is owned 100% and has a staff strength of 215. Its main activities are: Procurement, processing, milling and distribution of all kinds of grains.
- (iii) Dutse Estate Management Company Limited - Also owned 100% with a staff strength of 165. Its main activities are: Management of the company's estate and civil Engineering construction and building maintenance both within and outside the group.
- (iv) Plateau Bottling Company Limited - Also owned 100% by JIB PLC. It has a staff strength of 115 and manufactures "QUIX" brand of soft drinks.

The company also holds 39% of the paid-up ordinary shares of Gongola Brewery Limited and 6% of the paid-up capital of ROC International Hotels Limited.

Finally, as at 31st December, 1990, the company, that is the Brewery had a total of 665 employees, 7 of which were in the senior management cadre and 68 in the middle management level. The company now has a fully equipped training centre where employees are trained in all aspects of brewing processes, quality control procedures, products development and marketing.

3.2 DATA PRESENTATION AND ANALYSIS

The preceding chapter of this study dealt with the theoretical background of financial ratios and their effectiveness as a tool for performance appraisal. This chapter is aimed at primarily the computation of the ratios already selected in chapter one. This is going to be done using the financial statements of Jos International Breweries PLC for the years 1988, 1989 and 1990. As indicated in chapter one, the ratios to be calculated and interpreted are grouped into four. These are:

- (i) Liquidity ratios
- (ii) Profitability ratios
- (iii) Efficiency ratios
- (iv) Leverage ratios.

LIQUIDITY RATIOS

This group of ratios provide the basis for answering the question, does the firm have enough cash and near cash assets to pay its bills on time? Under this category, two ratios will be calculated that is, current ratio and quick ratio.

Current ratio: This is measured by current assets/current liabilities.

| | 1990 | 1989 | 1988 |
|---------------------|-------------|-------------|-------------|
| Current Assets | ₦76,488,000 | ₦52,590,000 | ₦41,034,000 |
| Current Liabilities | ₦57,137,000 | ₦49,379,000 | ₦47,079,000 |
| Ratios | 1.34:1 | 1.06:1 | 0.87:1 |

The current ratios computed above indicates that for every 1.34 of current assets in 1990, there was 1 of current liabilities, and for every 1.06 of current assets in 1989, there was 1 of current liabilities. In 1988, for every 0.87 of current assets, there was 1 of current liabilities. As the company's current ratio stands, if the worse happens, and the current assets are sold at distressed prices, the company will not be able to meet its current obligations. However, the liquidity position of the company from a position of 0.87:1 in 1988 to 1.06:1 in 1989 and 1.34:1 in 1990. The improvement in the current ratio was as a result of increase in inventories of finished goods, packaging materials and other consumables and work-in-progress. Some fixed assets were also disposed off during the relevant years which also improved the company's current ratio.

QUICK RATIO

This is measured by current assets less stock divided by current liabilities. For the JIB PLC the quick ratios for the relevant years are:-

| | <u>1990</u> | <u>1989</u> | <u>1988</u> |
|---------------------|-------------|-------------|-------------|
| CA Less Stock | ₦45,258,000 | ₦25,017,000 | ₦14,049,000 |
| Current Liabilities | ₦57,137,000 | ₦49,379,000 | ₦47,079,000 |
| Ratios | 0.79:1 | 0.51:1 | 0.30:1 |

Theoretically, a quick ratio of 1:1 is considered a satisfactory current financial condition. Although the quick ratio of the company showed some improvements over the relevant years, the liquidity position without stock was far from being healthy. The ratios indicates that in 1990, for every 0.79 of current assets less stock, there was 1.00 of current liabilities. This is not a good liquidity position, since the company would have to resort to the sell of its stock. It should be noted that the stock of the company was made up of raw materials, packaging materials and other consumables, work in progress and finished goods. The percentage of the finished goods inventory for the years 1990, 1989 and 1988 were 3.05%, 1.79% and 0.44% respectively. This is an indication that finished goods inventory form an insignificant portion of the company's inventory. The liquidity position of the company was poor for the relevant years particularly 1988, because the significant portion of its inventories were items usually difficult to dispose off.

(ii) PROFITABILITY RATIOS

This group of ratios will be divided into two. These are:

- (a) Profitability in relation to sales
- (b) Profitability in relation to investment.

Under profitability in relation to sales, we have ratios like gross profit margin and net profit margin.

GROSS PROFIT MARGIN

This ratio is measured by $\frac{\text{Gross Profit}}{\text{Net Sales}}$

The information available in company's profit and loss account is not clear as to what constitute gross profit. The cost of goods sold is lumped up with other operating costs. It is therefore not possible to isolate it in order to compute the gross profit. The ratio of gross profit to sales is a measure of management's ability to control the firm's cost of goods sold in relation to sales.

NET PROFIT MARGIN

This ratio measures the ability of management to control expenses involved in generating sales. It is measured by profit after taxes/sales.

| | N'000 1990 | N'000 1989 | N'000 1988 |
|------------------|-------------|------------|------------|
| After tax profit | (5356) | 4242 | 2980 |
| Sales | 76,120 | 97,608 | 94,949 |
| Ratios = | -0.07 or 7% | 0.04 or 4% | 0.03 or 3% |

In 1990, each naira of sales resulted in a loss of N0.07, while in 1989 and 1988, each naira of sales brought in profit after taxes of N0.04 and N0.03 respectively. In 1990, the company witnessed declining demand for its products coupled with rising cost of production. This is evidenced in the 1990 turnover figure of N74,120,000 as against the 1989 and 1988 net sales of N97,608,000 and N94,949,000 respectively.

OPERATING RATIO

This ratio indicates how much each naira of sales have been consumed by the cost of goods sold and operating expenses.

| | <u>N'000 1990</u> | <u>N'000 1989</u> | <u>N'000 1988</u> |
|-----------------|-------------------|-------------------|-------------------|
| Operating Costs | 77,985 | 87,922 | 83,377 |
| Sales | 76,120 | 97,608 | 94,949 |
| Ratios | 1.02 or 102% | 0.90 or 90% | 0.89 or 89% |

The 102%, 90% and 89% operating ratios for 1990, 1989 and 1988 respectively indicates that in 1990, the net sales of ₦76,120,000 was not enough to cover the company's cost of goods sold and other operating costs. In 1989, 90% of sales was consumed by the company's operating costs while 89% of sales was consumed by operating costs in 1988. This means that only 11% and 10% of sales were left in 1988 and 1989 respectively to cover interest charges, income taxes, dividends and retained profits for expansion.

PROFITABILITY IN RELATION TO INVESTMENT

This category of profitability ratios attempts to measure a firm's profits in relation to the invested funds used to generate those profits.

RETURN ON ASSETS EMPLOYED

It is measured by
$$\frac{\text{Net profit after taxes}}{\text{Total Assets}}$$

| | <u>N'000 1990</u> | <u>N'000 1989</u> | <u>N'000 1988</u> |
|--------------|-------------------|-------------------|-------------------|
| Net Income | (5356) | 4242 | 2980 |
| Total Assets | 234031 | 214530 | 203334 |
| Ratios | -0.02 or .2% | 0.02 or 2% | 0.01 or 1% |

This indicates that for every ₦1.00 of funds supplied in 1990, there was a loss of ₦0.02, and for every ₦1.00 of funds supplied in 1989 and 1988, there was a positive return of ₦0.02 and ₦0.01 respectively.

(iii) EFFICIENCY RATIOS

"The funds of creditors and owners are invested in various kinds of assets to generate sales and profits..... Activity ratios are employed to evaluate the efficiency with which the firm manages and utilises its assets." (I. M. Pandey, 1981 P. 512)

Among the efficiency ratios to be analysed are:

- (a) Average collection period
- (b) Inventory turnover
- (c) Fixed Assets turnover
- (d) Total assets turnover

AVERAGE COLLECTION PERIOD

This indicates the length of time the company must wait after making a sale before it receives payment. It is measured by

| | <u>Debtors x days in year</u> <u>Sales</u> | | |
|----------|---|-------------------|-------------------|
| | <u>N'000 1990</u> | <u>N'000 1989</u> | <u>N'000 1988</u> |
| Debtors | N3,461 | N5,506 | N3,628 |
| x 360 | 1,245,960 | 1,982,160 | 1,306,080 |
| Sales | 76,120 | 97,608 | 94,949 |
| Ratios = | 16.37 days | 20.31 days | 13.76 days |

The ratios indicates that on the average, it took the company 16 days to receive payments after sales in 1990, and 20 days to receive payment in 1989, and 14 days in 1988. This is a good indication of quality debtors. It implies that the company's debtors settle their debts promptly. Alternatively, the company may have sold only to those customers whose financial conditions were undoubtedly sound, and who were prompt in making payment. Such a

policy succeeds in avoiding the baddebt losses but severely curtails sales that the overall profits become low as was the case with JIB PLC.

INVENTORY TURNOVER

Inventory turnover ratio is measured by Sales/inventory of finished goods.

| | <u>1990</u> | <u>1989</u> | <u>1988</u> |
|-------------------|-------------|--------------|--------------|
| Sales | N76,120,000 | N97,608,000 | N94,949,000 |
| F/goods Inventory | N 952,000 | N 494,000 | N 118,000 |
| Ratios | 79.96 times | 197.59 times | 804.65 times |

The inventory turnover shows how rapidly the inventory is turning into receivables through sales. From the above calculations, JIB PLC was therefore more efficient in its inventory management in 1988, than in 1989 and 1990. The poor performance of the company in 1990 can partly be attributed to its poor inventory management in that year. Inventory of finished goods turned into receivables 80 times in 1990 as against 198 times in 1989 and 805 times in 1988.

What could have accounted for the low inventory turnover in 1990? In an interview with the Chief Accountant of the Company, he is of the opinion that the low inventory turnover was not the result of poor management along, but also the result of the poor economic situation in the country which resulted in low demand for the firm's products.

FIXED ASSETS TURNOVER

This measures the sales productivity and utilisation of plant and equipment. It is measured by Sales/Fixed assets.

| | 1990 | 1989 | 1988 |
|--------------|--------------|-------------|--------------|
| Sales | N76,120,000 | N97,608,000 | N94,949,000 |
| Fixed Assets | N157,543,000 | N16,940,000 | N162,300,000 |
| Ratios = | 0.48 | = 0.60 | = 0.58 |

The fixed asset turnover indicated that each naira investment in fixed assets generated a sale of N0.48 in 1990, N0.60 in 1989 and N0.58 in 1988. Since the return on each naira invested in fixed assets of the firm is generally low over the relevant years, the company can therefore be adjudged inefficient in its fixed assets utilisation particularly in 1990, where the return is less than half of each naira invested in fixed assets.

TOTAL ASSETS TURNOVER

This measures the firm's utilisation of all its assets. It is computed by dividing sales by total assets.

| | N'000 1990 | N'000 1989 | N'000 1988 |
|--------------|------------|------------|------------|
| Sales | 76,120 | 97,608 | 94,949 |
| Total Assets | 234,031 | 214,530 | 203,334 |
| Ratios = | 0.32 | = 0.45 | = 0.47 |

The total assets turnover indicates that each naira investment in total assets in 1990, 1989 and 1988 generated sales of N0.32, N0.45 and N0.47 respectively. It is noted that all the per naira return funds invested on total assets fell below 50%. This indicates the company's inability to generate sales from all the financial resources committed to the company by both its owners and creditors.

(iv) LEVERAGE RATIOS:

This class of ratios indicates the funds provided by owners and creditors of the firm. They show the proportion of debt to equity financing of the firm's assets.

The leverage ratios to be analysed are:

- (a) Debt to assets ratio
- (b) Times interest earned

DEBT TO ASSETS RATIO

This is a measure of the extent to which borrowed funds have been used to finance the firm's operations. It is computed by dividing total debt by total assets.

| | <u>N'000 1990</u> | <u>N'000 1989</u> | <u>N'000 1988</u> |
|--------------|-------------------|-------------------|-------------------|
| Total debt | 101,524 | 76,964 | 69,332 |
| Total assets | 234,031 | 214,530 | 203,334 |
| Ratios | 0.43 or 43% | 0.36 or 36% | 0.34 or 34% |

Thus, 43 percent, 36 per cent and 34 percent of the company's assets in 1990, 1989 and 1988 respectively were financed with borrowed funds. This mean that the company may not have difficulty trying to borrow additional funds in the future. However, the management of the company must be careful about increasing financing of capital with borrowed funds because of the cost associated with debt financing.

TIMES - INTEREST - EARNED

This measures the extent to which earnings can decline without the firm becoming unable to meet its annual interest costs. It is measured by
$$\frac{\text{Profits before interest and taxes (EBIT)}}{\text{Total Interest Charges}}$$

| | <u>N'000 1990</u> | <u>N'000 1989</u> | <u>N'000 1988</u> |
|------------------|-------------------|-------------------|-------------------|
| EBIT | 3,187 | 12,619 | 11,132 |
| Interest Charges | 11,476 | 5,266 | 5,300 |
| Ratios | 0.28 times | 2.40 times | 2.10 times |

The interest coverage ratio as calculated above shows that, the earning before interest and taxes in 1990 could only cover 28% of that years interest charges. The implication of this is that the company would have to renegotiate with its creditors or resort to more borrowing from other sources to settle the outstanding interest. The situation was much better in 1989 and 1988 when the earnings before interest and taxes covered the interest charges twice. From the surface, it would seem that the company was more efficient in its operations in 1988 and 1989 than 1990.

However, a critical examination of the company's financial statements for the relevant years shows that the major reason for the very low times. Interest earned ratio in 1990 was as a result of upward review of interest charges on bank loans. The upward review of banks lending interest rates was a national phenomenon which came about as a result of the deregulation of the economy.

SUMMARY OF RATIOS FOR JIB PLC

| S/NO | TYPE OF RATIO | FORMULAR A | 1990 | 1989 | 1988 |
|------|------------------------------|--|----------------|-----------------|-----------------|
| | <u>Liquidity Ratios</u> | | | | |
| 1. | Current ratio | Current assests/ Current liabili- ties | 1.34 | 1.06 | 0.87 |
| 2. | Quick ratio | CA-Stock/CL | 0.79 | 0.51 | 0.30 |
| | <u>Profitability Rations</u> | | | | |
| 3. | Gross Margin | Gross Profit/Net Sales | NA | NA | NA |
| 4. | Net Profit Margin | Profit after taxes/sales | -0.07 | 0.04 | 0.03 |
| 5. | Operating ratio | Operating costs/ Sales | 102% | 90% | 89% |
| 6. | Return on Assets employed | Net Profit after taxes/Total assets | -0.02 | 0.02 | 0.01 |
| | <u>EFFICIENCY RATIOS</u> | | | | |
| 7. | Average Collection period | Debtors x 360/ Sales | 16.37 days | 20.31 days | 13.76 days |
| 8. | Inventory turn over | Sales/Inventory of finished goods | 79.96 times | 197.59 times | 804.65 times |
| 9. | Fixed Assets turnover | Sales/Fixed Assets | 0.48 | 0.60 | 0.58 |
| 10. | Total Assets turnover | Sales/total Assets | 0.32 | 0.45 | 0.47 |
| | <u>Leverage Ratios</u> | | | | |
| 11. | Debt to Assets Ratio | Total debts/ total assets | 0.43 | 0.36 | 0.34 |
| 12. | Times-Interest earned | EBIT/Interest Charges | 0.28 times | 2.40 times | 2.10 times |

CHAPTER FOUR

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

4.1 SUMMARY OF FINDINGS

In this study, a critical analysis of the financial statements of Jos International Breweries PLC was carried out through the use of ratio analysis. Twelve ratios were considered under four broad categories. The categories and the ratios considered under each category are:

(a) Liquidity Ratios:

(i) Current ratio

(ii) Quick ratio

(b) Profitability Ratios:

(i) Gross profit margin

(ii) Net Profit margin

(iii) Operating Ratio

(iv) Return on Assets employed.

(c) Efficiency Ratios:

(i) Average collection period

(ii) Fixed assets turnover

(iii) Total assets turnover

(iv) Inventory turnover

(d) Leverage Ratios:

(i) Debt to assets turnover

(ii) Times-interest earned.

All the ratios computed were compared over a period of three years - 1988, 1989 and 1990, and the following are the findings made:

- (i) The firm's current ratios for the years under review were all under the conventional 2:1 cut-off point for the ratio of current assets to current liabilities. For 1988, the ratio was 0.87:1; 1.06:1 for 1989, and 1.34:1 for 1990. The implication of this is that the firm was not liquide enough to settle all its current financial obligations. The situation was worse in 1988 where, the ratio indicates that for every 0.87 of current assets, there was 1.00 of current liability. The implication of this is that the fim's creditors may be unwilling to grant it further loans or they may even go a step further and force the firm into liquidation if it persistently fail to honour its debt obligations as and when due.
- (ii) The firm's quick ratios for the years under review were 0.30:1 for 1988; 0.51:1 for 1989, and 0.79:1 for 1990. It could be noticed that the ratios fell below the cut-off point of 1:1 conventionally allowed for quick ratio.
- (iii) The ratios of net profit margin for the period under review reveals that every one naira of

sales brought in after tax profit of ₦0.03; ₦0.04 for 1988 and 1989 respectively, while in 1990 there was 7% loss on each sales.

- (iv) The firm's operating ratios for 1990, 1989 and 1988 were 102 percent, 90 percent and 89 percent respectively. This means that the firm's turnover of ₦76.1m in 1990 was not enough to cover its operating costs. In 1989 and '88, operating costs consumes 90 percent of the firm's turnover leaving only about 10% of the turnover to cover interest charges, income taxes, dividends and retained profits for expansion.
- (v) Return on assets employed shows that for every ₦1.00 of funds supplied by both owners and creditors in 1990, there was a loss of ₦0.02. In 1989 there was a profit of ₦0.02 on each naira of assets employed, while in 1988, it was a profit of ₦0.01 on each naira of assets employed.
- (vi) The firm's average collection period was 16 days, 20 days and 14 days for 1990, 1989 and 1988 respectively. This is an indication that the firm's effectiveness in its credit and collection policy. However, this could also

be an indication that if avoided selling on credit for fear of bad debt losses.

- (vii) The interest - coverage ratios for the relevant years indicates that EBIT for 1990 could only cover 28 percent of outstanding interest charges. While EBIT was only N3.1m, interest charges stood at N11.5m. The situation was however, better in 1989, and 1988 where EBIT covered interest charges twice.

4.2 CONCLUSIONS

The success or failure of any organization depends on the outcome of the decisions taken by management. Decision making becomes more vital when it concerns finance, because a faulty decision in the area of finance could spell doom for the organization.

Because of the importance of financial decision making in organizations, it has become imperative for managers to rely more on evaluative techniques to provide them with hard facts on which to base their decisions.

As seen from the analysis of the financial statements of the firm studied, ratios no doubt are the most accurate and reliable financial evaluative tool available to the manager. After having subjected the financial statements of JIB PLC to ratio analysis, it has become clear that ratios can be employed to predict and forecast difficulties and prospects of a firm over a wide range of time. Ratios provide the manager with facts about

what had happened, what is happening and what is likely to happen. With such information, the manager can plan his strategies to deal with the giving situation more effectively and efficiently. For instance, the ratio of cost of raw materials to sales indicates that 39 percent of the firm's sales in 1990 went into purchase of raw materials. This is an area for further analysis and investigation. All these will equip the manager with sufficient information for effective decision making.

4.3 RECOMMENDATION

After analysing the financial statements of Jos International Breweries PLC using ratio analysis over a three year period, it became clear that the company's financial position presently is far from being healthy. The following recommendations are therefore offered:

- (i) The firm's current and quick ratios are low indicating weak liquidity position, and therefore inability to pay its current obligations as and when due. It is therefore, recommended that the company should increase the level of its current assets particularly its cash and stock of finished goods inventory. This, the company can do by divesting its interest in inefficient subsidiaries e.g. soft drink bottling, farming operations and its interest in Congola breweries. These subsidiaries have been incurring heavy losses over the years. The proceed of such divestment can then be invested in areas that

could bring in quick returns so that the returns could be used to off-set some of the current liabilities that are due. Alternatively, the proceed could be invested in the brewing business so that the company can operate at near full capacity, which will improve the current ratio through increase in stock of work-in-progress and finished goods.

(ii) The firm's net profit margin ratios over the relevant years were very low, while the operating ratios were high. It is therefore recommended that the company should calculate the ratio of individual operating expenses to sales to know those expense items that consume more of each sales naira. As soon as such expense items are identified, appropriate control measures should be instituted, if such an expense item is controllable. For example, the ratio of cost of raw materials to sales will show the following:

| | <u>N'000 1990</u> | <u>N'000 1989</u> | <u>N'000 1988</u> |
|-----------------------|-------------------|-------------------|-------------------|
| Cost of Raw Materials | 29,474 | 41,610 | 32,133 |
| Sales | 76,120 | 97,608 | 94,949 |
| Ratios | 0.39 or 39% | 0.43 or 43% | 0.34 or 34% |

This implies that in 1990, 39 percent of sales was consumed by cost of raw materials. In 1989 and 1988, the sales turnover that went into purchase of raw materials were 43 percent and 34 percent respectively.

(iii) Interest - earned ratio: In 1989, and 1988 the ratio of EBIT to fixed interest charged was 2:1, but in 1990, it was 0.28:1. Typically, an interest cover of at least three (3) times should be allowed but the actual figure depends on which interest cover the firm desires. The firm can then use it to calculate the maximum level of fixed interest that it can pay and thereby maximum amount of loan capital it should raise. JIB PLC did not bother to plan its debt financing programme, the firm borrowed only when the need for funds arose. It is recommended therefore that the company should arrange with its current long-term creditors with the view to converting them to ordinary shareholders particularly now that the company has gone public. This will give the company some breathing space to decide on the appropriate mix of debt to equity financing.

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