THE RELATIONSHIP BETWEEN EARNING PER SHARE AND THE PRICE OF SHARES ON THE NIGERIAN STOCK EXCHANGE

BY

BENJAMIN H. ACHIATAR

A DISSERTATION SUBMITTED TO
THE POSTGRADUATE SCHOOL,
AHMADU BELLO UNIVERSITY, ZARIA
IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE
DEGREE M.SC (ACCOUNTING & FINANCE)

D E C L A R A T I O N

I hereby declare that this research work was carried out by me under the supervision of Mr. Solomon Akanet, who was my Course Instructor and my Supervisor. To the best of my knowledge and belief, this research work has never been submitted either in Ahmadu Bello University, Zaria, or any other institution for the award of a Degree. The sources of all quotations have been acknowledged. However, any mistake contained in this work is my sole responsibility.

May 18, 1994

BENJAMIN H. ACHIATAR

C E R T I F I C A T I O N

This dissertation entitled **"The Relationship Beatween Earnings Per Share and The Price of Shares on The Nigerian Stock Exchange"** by **BENJAMIN H. ACHIATAR** meets the regulations governing the award of the Degree of Master of Science in Accounting and Finance of Ahmadu Bello University, and is approved for its contribution to knowledge and literary presentation.

DIGITIZED

S. AKANET ..... Date: 27/10/94
Chairman, Supervisory Committee

A. SILVA ..... Date: 27/10/94
Member, Supervisory Committee

DIGITIZED

..... Date: .....
Member, Supervisory Committee

Head of Department
Ahmadu Bello University
Zaria

..... Date: 27/10/94
Head of Department

..... Date: 07/04/01
Dean, Post-Graduate School

A C K N O W L E D G E M E N T S

I thank the Almighty God for giving me the opportunity to successfully participate in this programme. Great is his power.

I must express my sincere thanks to Mr. Solomon Akanet, my Course Instructor in Corporate Finance and who was also my Supervisor for this dissertation. He was kind enough to give so much of his precious time even outside of normal working hours. His comments and suggestions were most useful and highly appreciated. I must also express my thanks to his family for their indulgence in allowing me interfere on their private time as it so often was throughout the period of work on this dissertation.

DIGITIZED

I must also express my appreciation to Dr. Akpa, Mallam Ibrahim Dogo, Mr. Abraham Ityakyaa, who were also my Instructors in the Course and whose encouragement I will never forget. I must also express my thanks to Mr. David Gberikon without whose encouragement and active assistance, this work couldn't have been possible. My thanks also go to Mr. B.T. Iornum for his assistance.

I wish to express my profound appreciation to Engr. B.A.I. Gemade and Col. J. Nenger, for their belief in my ability to succeed, and their support generally. My wife, Mrs. Comfort Achiatar, also deserves special thanks for her unalloyed attention and support throughout the duration of this Course. I also need to thank my brothers, Mr. A. Igbudu, Mr. Dan Ankwagh and Engr. Moses Damkor both of Benue Cement, for their interest and support. My sincere appreciation also go to Mr. Samuel Shayongo and Mr. H.M. Barrah who typed the scripts.

Any mistake in this dissertation is my responsibility and not that of those who helped in various ways to help actualize it.

A B S T R A C T

In the world of uncertainties, risk is the one ever present variable in investment decision making. Once Management has a clear cut view of the relationship between risk and returns on investment, rules for undertaking investments can be developed. It is the return on investment which determines the extent of risk the investor can accept. The return on investment also determines to a large extent the demand and price for any given security. It all boils down to the fact that a proper insight can only be gained about any stock market if the relationship between the return on investment and price of shares is properly explored.

The return on investment can be said to be governed by the profit available to shareholders for distribution and for purposes of comparability it is calculated as earnings per share.

In order to enhance the understanding of the Nigerian Stock Exchange this study titled "The Relationship Between Earnings Per Share and The Price of Shares on the Nigerian Stock Exchange" has been undertaken and covers the period 1985 - 1989. The first Chapter therefore explains the background and research problem; it also goes further to consider the purpose and significance as well as the scope and limitations.

In the second Chapter on Literature Review, the capital market in general is considered and all the factors responsible for changes in stock price highlighted together with tools of analysis and theories of the stock market. The Chapter on Methodology explains the research design, sample and the construction of market index. The fourth Chapter is on historical background of each of the companies sampled, while the last two Chapters are devoted to research findings, summary, conclusion and recommendations respectively.

TABLE OF CONTENTS

			PAGE
Title Page			i
Declaration			ii
Certification			iii
Acknowledgement			iv - v
Abstract			vi - vii
Table of Contents			viii - ix
List of Figures			x
List of Tables			xi
CHAPTER	I	INTRODUCTION	1
	1.1	Background of the Study	1
	1.2	Statement of the Research Problem	7
	1.3	Purpose and Significance of the Study	8
	1.4	Scope of Study	9
	1.5	Limitations	10
	1.6	Plan of the Study	12
CHAPTER	II	LITERATURE	
	2.1	The Capital Market	14
	2.2	Factors responsible for changes in Stock Prices	16
	2.3	Analysis of the Stock Market	20
	2.4	Theories of the Stock Market	27

CHAPTER	III	METHODOLOGY	41
	3.1	Description of Research Approach	41
	3.2	Research Design	41
	3.3	Sample	46
	3.4	Data and Stock Price	46
	3.5	Construction of Market Index	47
CHAPTER	IV	HISTORICAL BACKGROUND OF COMPANIES SAMPLED	49
CHAPTER	V	RESEARCH FINDINGS	
	5.1	General Behaviour	65
	5.2	The Picture in 1985	67
	5.3	The Picture in 1986	68
	5.4	Outlook in 1987	69
	5.5	Analysis of 1988 Situation	70
	5.6	The Year 1989	71
	5.7	Tables	73
CHAPTER	VI	SUMMARY, CONCLUSION AND RECOMMENDATION	
	6.1	Summary	76
	6.2	Conclusion	77
	6.3	Recommendations	80
		References	82
		Bibliography	83
		Appendix - Figures	90.

LIST OF FIGURES

Figures		Page
1.	Diagrammatic Representation of S & P's Stock Index for the period: 1969 - 1981	18
2.	Capital Asset pricing Model	38
3.	Graphical Representation of the Average of Sample Prices indexed over the period: 1985 - 1989	78
4.	Graphical Representation of Average Stock Price and Average Earnings per Share	90
5-24	Graphical Representation of Stock Price/ Earnings per Share for Companies sampled	91 - 110

LIST OF TABLES

Tables		Page
1.	List of Securities sampled and the Sector each of them represents	73
2.	Earnings per Share of the Companies sampeld for the Years: 1985 - 1989	74
3.	Stock Market Price for each of the Comapnies sampeld for the Period: 1985 - 1989	75

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Ever since the establishment of stock markets, investors, brokers, the Securities and Exchange Commissions (SEC) themselves as well as academicians have watched and worried over factors that influence changes in the price of stock and in what proportion.

Studies have been funded by various bodies for this. Several factors have emerged from these studies establishing trends ranging from short term political considerations to long term economic cycles. But for the investors, considerations of optimum return on his investment, dominate his thinking, and it would therefore appear that after considering the many factors, earning power is the major one identified as having the greatest impact on share price as propounded by Graham, Dodd and Castle (1962).

This is not surprising when one considers the fact that in very general terms, people undertake investments to earn returns on them. There is therefore a great deal of common sense in the investor focusing his mind and attention on the returns he receives from any investment. What is however more important is that quite a large number of big time investors generally employ the services of

specialised agencies to handle their investments. This decision usually arises from the fact that the investor is so fully engaged in his main area of activity from which his income is derived, whether this is an individual or a corporation.

Another reason that informs this approach of investment through through third parties arises because the area of investment has become a very specialised field as a consequence of the variety of investment avenues. They are also very sophisticated and not easy to keep track of and effectively monitor. This leads to investor becoming wary of plunging himself into that activity directly. This fear that the investor may be shortchanged leads them to use investment agencies at an agreed fee or commission.

The investor believes that by turning over investment activity to persons or organisations that specialise in it saves them invaluable time and expertise are brought into play. The folowing paragrph takes a brief look at the traders on the Nigerian Stock Market.

There are on the Stock Exchange the buy side and the sell side. Sell-side institutions are firms that take a commission buy buying and selling to customers. This

means that brokerage firms are the sell side institutions. Buy side institutions are mutual funds, trust companies, pension funds, endowment funds, and others.

The way in which stock brokers do stock picking is usually based on analysis. A big firm will usually have several analysis who specialise in different industries. Their analysis are then made available to the brokerage firm and investors or clients. He can then use their information and recommend to his client certain stocks.

Buy side institutions are ones that invest other peoples funds for them. Such institutions are like mutual funds. A common stock mutual fund is a large pool of common stock or cash owned in proportion to each person's holding or funds put into it. It will either form a management company or contract the services of a management company to handle this for it. Advantages derived from this are as follows:-

(a) Diversification of risk: Mutual funds are managing large amounts of money and can easily diversify substantially.

Individuals can only buy a limited amount of stock.

(b) Book-Keeping - Most funds keep track of your fund and monitor gain or loss position reports, and tax consequences.

(c) Access to expertise of the management company.

Finally, to present a fair picture, it is necessary to consider advantages of individual investment as follows:-

(a) Concentration of investment. You can put all your money in one certain stock and if it goes up you can harvest high earnings.

(b) Control of investment. You can move your stock from one are to another without reference to anybody.

Other investors of significance are:-

(a) Pension Funds:

This is for companies that use it as retiring benefits.

(b) Trust Companies:

Manages money for personal trust and estates, charities and others.

(c) Insurance companies, charity and private foundations.

Earning power itself is measured in terms of earnings per share. The theme of this work, therefore, would be central in understanding the behaviour of the Nigerian Stock Exchange, i.e. the relationship between share price and earnings per share.

The efficient market theory holds that security prices always fully reflect all available relevant information. Adjustment to new information is virtually instantaneous. Well documented studies about this have been carried out for the developed capital markets of the wes t and other industrialised countries. They generally use the detailed statistical data of stock price, dividends, earnings, bonues shares, stock-splits, etc. They have invariably supported the weak form, and the semi strong form. The strong form seems to have evidence for and against it. In this study the relationship between changes in share price and earnings per share on the Nigerian Stock exchange is the focus.

In Nigeria, most investors perceive the purchase of sharres more like savings than a purely financial investment and they are hardly concerned about trading on the Stock Exchange as observed by Ajayi O. (1984). Thus Ajayi, O. notes that it is not surprising that in the year 1980/1981 and

1981/82 the Nigerian sTock Exchange recorded trading volumes of ₦6,119,169 and ₦8,118,927 respectively which is very low compared to the developed markets of Europe and America. In recent times however, there has been some improvement with an incresed listing of companies on the Stock Exchange. For example as at December 1990, 127 industrial stocks were listed on the NSE up from 93 as at December 1982. With the privatisation exercise, this number is bound to increase substantially.

Much of the literature on the Nigerian Stock Exchange is concerned with the history and procedure of listing companies. Only one work titled the Nigerian Stock Exchange and Investment Analysis by Osaze, and Isimbabi (1983) covering the period between 1977 - 1982 has attempted to subject dealing on the Nigerian Stock Exchange to formal analysis. Since then, circumstances have changed with the introduction of SAP, interest rate derevulation, privatisation and commercialisation of parastatals and organisations, and the long time lag since that study means many major changes may have occurred. This analysis which covers the period

1985 - 1989 is aimed at bridging this gap. The work goes further to compare the bahaviour of the Nigerian Stock Exchange with what obtains in the developed Stock Exchange of the West.

1.2 STATEMENT OF THE RESEARCH PROBLEM

As can be adduced from the above, the intention of this study is as follows:

(i) To analyse the movement of stock prices on the NSE using stock sampled for the period 1985 - 1989.

(ii) To determine whether earnings per share influence changes in stock and to what extent.

(iii) To determine other factors that may be responsible for changes in stock prices.

The period selected for the study is very important since it is thought that the study of the movement should cover the short term investor, the intermediate term investor and the long run investor. Long term investor may dismiss short term trends as "noise". The study therefore tries to present an approach which can be

customised to the needs of the investors depending on whether he is short term, intermediate or long term.

From this study earnings per share will be considered with greater emphasis. But other factors (e.g. Political, identical, etc.) are also considered to determine if they influence the movement of prices and are therefore of interest to both researcher and investor.

1.3 PURPOSE AND SIGNIFICANCE OF THE STUDY

The number of companeis quoted on the Nigerian Stock exchange is increasing as well as shareholders due to normal growth and the on-going privatisation exercise. Under the Privatisation and Commercialisation Decree of 1988, 43 and 67 companies are to be partially and fully privatised respectively. As at end of 1989, 16 companies had been taken to the market and quoted on the NSE. It is hoped that this study will prove useful to both the investing public and companies at least partly on the intricacies of stock behaviour.

Secondly, it is hoped that this will stimulate further interest for research or funding of same in this area as the stock market becomes more sophisticated and the participants more widely spread.

1.4 SCOPE OF STUDY

This study employs the fundamental analysis method otherwise known as charting to establish the fact that changes in stock prices do respond to the level of earnings per share in the published accounts of quoted companies. It does not however attempt to quantify the edtent of this relationship. Lack of complexity of the NSE transactions makes such analysis unnecessary and the absence of adequate statistical data for further technical analysis renders such exercise impossible under current circumstances. Bigger markets like NYSE with 1560 companies quoted and comprehensive data could use more sophisticated analysis.

It is sufficient for now to establish trends and this does not necessarily infer advice that the purchase of certain stocks or portfolios would earn higher profits.

1.5 LIMITATIONS

This study describes but does not undertake indepth study of other factors that may influence changes in stock prices, such factors are inflation, industrial factors and political factors.

There is limited literature on the Nigerian Stock Exchange, consequently, much of the literature review is of the developed stock markets of the West to which it is however expected that the Nigerian Stock Market will tend in the future. The modesl used for study here are therefore based on such literature.

Lack of availability of data is pervasive in the Nigerian economy. This has posed a major problem in obtaining data for the purpose of this study. Information on earnings per share and stock prices for the relevant years 1985 - 1989 has been obtained from various sources at great personal effort. This also made it difficult to do the study of prices on daily basis as it done in advanced economies. However, this drawback is readily compensated for by the fact that reactions to information is slow and protracted over time on

the Nigerian Stock Market as noted by Ajayi O. (1984). Regulatory environment requires physical possession of Share Certificates before such can be sold. This takes a lont time and it follows that reaction would be slow.

The work load involved in carrying out a research of this nature is much even in a less complex stock exchange without computer, and in most cases, is done by two or more persons. This also has the benefit of eliminating personal bias inherent in a one person study.

However, great care has been taken to avoid this, but it is considered fair to disclose the situation for the benefit of the reader.

For studies carried out in the developed markets, the authors are known to have access to information about companies over decades and therefore reseach involves single companies over decades. Aothough the Nigerian Stock Exchange was incorporated in 1960 and started business in earnest on 5th June, 1961, with 19 securities, comprehensive information on any one company from then up to the period under study is hard

to come by and as a result, a large number of companies have been sampled to compensate for the short period covered. Thus the study may not be depended upon for long term extrapolations though it may well be of assistance.

This is mainly because investors' demand for securities change as noted by Neave and Wiginton (1981)[1] "The total demand for the riskless asset is the sum of individual's demands for it. Alternatively phrased, market demand determines securities and prices when their supply is fixed". This implies that when other variables change, it may not be proper to assume that the result obtained in this study must always apply.

1.6 PLAN OF THE STUDY

This study consists of six chapters. The first chapter consists primarily of the general background of the study which is the subject of the first section. In the second section a description of the research problem leads to the purpose and significance of the study. This chapter closes with a description of the scope, limitations and a plan of the whole study.

The second chapter is devoted to review of relevant literature on the subject and it describes what the capital market is like and goes on to analyse factors responsible for changes in stock prices. The third section describes the various tools used in the analysis

of the stock market. Finally, in Section 4, is about current theories and conclusions about the behaviour of the stock market. In Chapter Three there is a brief description of the research approach, research design. The sample data and construction of the market index are also contained in this Chapter. The historical background of each of the Companies sampled is outlined in Chapter IV while research findings are in Chapter V, and Recommendation and Conclusions are in Chapter VI.

CHAPTER TWO

LITERATURE REVIEW

2.1 THE CAPITAL MARKET

Ordinarily, the Capital Market acts as a resource medium. On the one hand are citizens and isntitutions that have generated savings. On the other are the areas where investment of funds in productive areas like manufacturing, trading and governmental development activities is done. These finds have to be invested and channelled for allocation to industry, commerce, agriculture and government. The stock market is therefore expected to act as the medium for the efficient transfer of savings to the saving deficit sectors. It is also supposed to be a regulatory body to ensure that the investing public is not defrauded.

These fundctions of the capital market imply that the development of any economy would be reflected in the effectiveness and efficiency of the capital market. Industry and commerce usually require funds outside of the commercial banking sector.

The capital market also determines to a large extent prices that shares of new companies to be listed are valued. It is also expected to stabilise prices

and even though fluctuations may occur, the capital market reflects a fair price of shares being traded.

A summary of the major functions performed by the stock exchange are as follows:-

(a) It creates a continuous market for immediate sales or purchase of securities at prices determined by their value under demand and supply forces through buy and sell orders from investors, thereby enabling investors who have such marketable securities to maintain continuous liquidity situations since they are not obliged to hold them indefinitely.

(b) Channelling funds through new issues to finance industrial investments.

(c) Activity on the stock market indicates the public perception of the future of a country's economy and is often regarded as a leading economic indicator.

(d) Public confidence in financing investments is encouraged through safeguard-rule and

regulations on the stock the stock exchange.

(e) It provides an easily accessible means whereby investors can buy and sell securities efficiently and relatively inexpensively.

(f) The existence of a market enables a wider distribution of primary issues.

(g) Companies traded on the exchange become well known through publicity given to quotations.

In the next Section, we explore the general factors that affect changes in prices in the capital market in general, and the stock market in particular.

2.2 FACTORS REPONSIBLE FOR CHANGES IN STOCK PRICES

As earlier mentioned, much of the review here is drawn from studies carried out in the well developed markets of the West. However, it is contended that this is not out of place because ultimately the Nigerian Stock Market should tend towards this destiny as it matures.

As stated by Pike (1983) in his work on why Stocks

Go Up and Down, the price of a stock, with perhaps some rare exceptions is not determined by a small group of welathy investors, nor it is set by a brokerage firm, mutual fund, a big bank or a trust company. Rather, stock prices reflect the market's opinion. The opinion of the market itself is governed or influenced by many factors - both short and long term. These factors will now be examined in some detail.

2.2.1 POLITICAL FACTORS

Stock markets operate in an economic environment which in turn is influenced by political climate. Stock prices are therefore affected by the political climate in many ways. In ware situations there is the incidence of uncertainty which is not only internal but external as well. During the Suez Canal crisis of 1956 prices on the London Stock Exchange tumbled.

Similarly, during the Arab/Israeli war in 1973 which resulted in the price hike of oil prompted by embargo in production by Saudi Arabia, stock collaped on the new York Stock Exchange. Thus, war situations create uncertainties which affect stock prices as observed by Kinsman (1985).

It has also been observed that changes in governments also affect the price of stock. The New York Stock Exchange is known to react to election of Presidents. According to Kinsman (1985) the Stock Market cycle clearly tended to peak in Presidential election years and to bottom in congressional election years. Since 1968, four market tops have occurred at within a few months following the four out of six Presidential Elections. But he Kinsman (1985) cautions that the political cycle should tell us in which direction to look but not what do do. Thus emprical evidence suggest a compelling theory that politicians put a best financial face forward when appealing to voters, thus each Presidential Administration swings the greatest weight in this cycle.

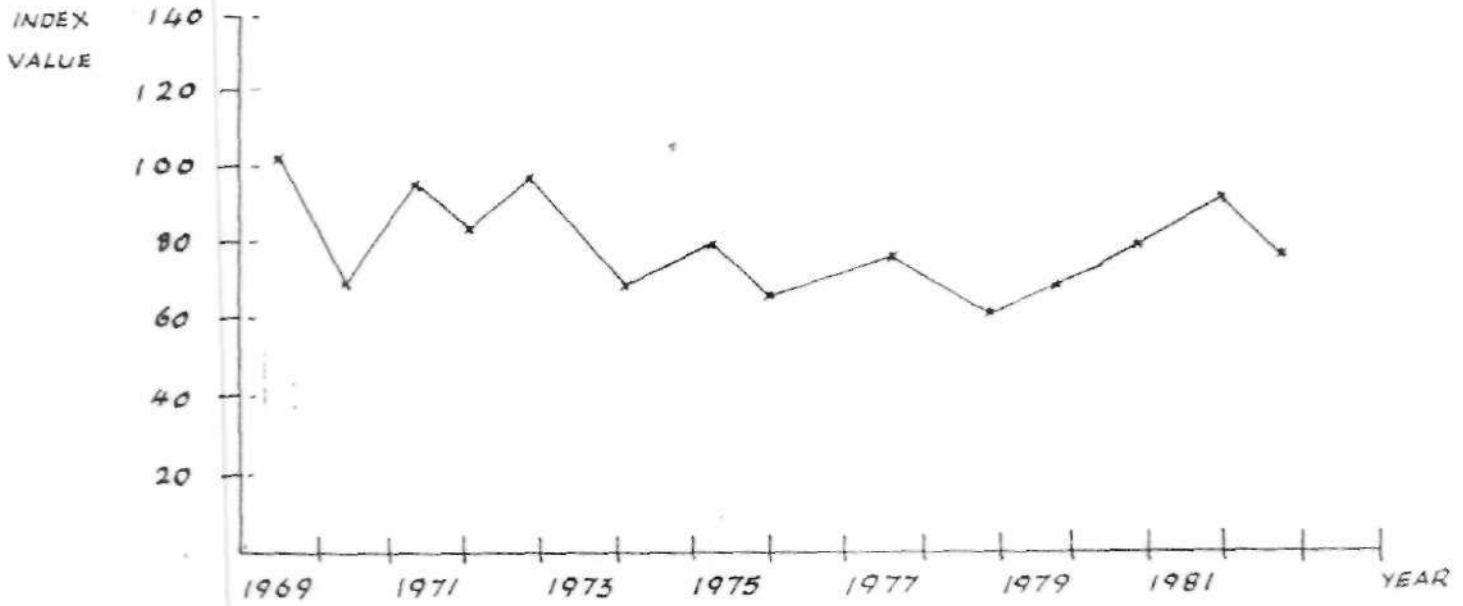


Figure 1: S & P 500

In Figure 1 above, the S & P Stock Index for the year 1969 - 1981 shows how stock prices peaked just before Presidential Elections. This shows three cycles and with the exception of the Carter blunder of 1980, Presidents generally manage the economy better towards a Presidential Election resulting in the increase in share prices. This is a demonstration of political incluence on stock prices.

2.2.2 ECONOMIC RELATED FACTORS

In 1969, for a variety of resons described and analysed by Reagan (1972), fundamental causes and current precipitating causes, many brokerage firms disappeared through bankruptcy or absorption into stronger firms. Confidence in the soundness of basic financial institutions was shaken. There was a sharp decline in stock prices. More pronounced industrial factor peculiar to a set of industries like the automobile have been identified. When the price of gasoline increased dramatically, there was a greater demand for fuel efficient cars made in Japan. This led to a fall in share price of car makers on the NYSE. However, by far the most important determination of stock price is corporate profits.

During the great depression both profits and stock price fell by over 75%.

Generally speaking, the relative importance of the various factors influencing stock price as identified by Kin (1964) in a study of 403 consecutive months (1927 - 60) for 63 New York Stock Exchange reveals the following:-

(a) The market as a shole (Market and Economic) 11.3%
(b) The industry - 12%
(c) The industry sub-group - 37%
(d) The company - 20%.

There was also evidence of inter-industry co-variance for stocks of major industries. However the relative importance of these factors change from one period to another.

2.3 ANALYSIS OF THE STOCK MARKET

2.3.1 THE DOW JONES INDUSTRIAL AVERAGE

This is the most commonly used analystical tool in the discussion of stock market theories. This involves three important steps of sampling, weighting and averaging.

The importance of samply is the degree to which one can infer movements in excluded stock on the basis

of included stock. The Dow-Jones accomplishes this by using the fact that stocks of few large companies constiture a big proportion of all stocks in the market. Secondly, there is the tendency of stocks to move together in what can be referred to as general movements in the market. Almost half of the variation in prices of individual stock in a study on the New York Stock Exchange between 1926 and 1965 was accounted for by this factor. Originally, the Dow-Jones Averages were constructed by adding the prices of all included stocks and dividing by the number of stocks (adjusted for splits) since then, instead of summing the prices and dividing by the number of stocks, the price total have been deivided by a number of adjusted so that the average is unaffected on the transition date.

The Dow-Jones Averages is not an index, but there is no exact equivalence between points in the average and dollars and cents. A change of $1 in each stock in the index would cuase the average to change by about 18 points. The Dow uses 30 stocks of large, well established companies and by 1970 they constituted about 30 per cent of the market value of all stock on the New York Stock Exchange. It has been argued that the blue chips

are not a representative sample of the stock market population. Other criticisms are on the failure to adjust for small stock dividends. In 1964 these small stock dividends made up 19% of total dividends reported. In spite of the cricism, the Dow-Jones Industrial Average continues to enjoy a great deal of popularity mainly because the stock in its sample is a fair representation of the total stock and it is simple to compute.

2.3.2 THE STANDARD & POOR'S "500"

This index is made up of 425 industrials, 50 utilities and 25 railroads. It is actually base-weighted aggregated and adjusted for new issues, and stock dividends. This aggregate of the period 1941 - 1943. This is then divvided by ten which was selected as the value of the index in the base period. It was first published in 1957 and it is considerably broader than the Dow Jones Average. For instance, in 1965 the aggregage market value of the S & P's (599) was 80% of all stock on the New York Stock Exchange. On the same date Dow-Jones Average was 40% of ther stock on the market value of New York Stock Exchange and all the stocks in the Dow-Jones Averages was included in S & P's "500".

There is a great deal of correlation between idexes of prices of stocks on the New York Stock Exchange. For instance between January 1926 - Dec. 1966, the correlation between the Dow-Jones Industrial and Standard & Poor's "500" was 0.976. This means that movements in the various indexes corresond closely.

2.3.3 CORRELATION MODELS

The use of correlation co-efficients to analyse causes of share price changes was done by Lantane and Tuttle (1967). Earnings predictability was measured by correlations between changes in annual reported earnings per share figures and changes in stock prices computed over time period which proceded (led) and succeeded (lagged) the earnings change observation year. The degreee of association between earnings changes and stock price changes was measured by the Spaearman rank correlation co-efficient.

The correlation models included for independent time period tests to investigate the stock market's reaction to changes in reported earnings per share figures for each of the years: 1967 through 1970. The four models were referred to as long term, intermediate, short term and current.

An earnings change ration (ER) was computed for each sample firm by dividing the current year's earnigns per share (EPS) figure as reported in the Wall Street Journal and confirmed in the Annual Financial Report, by the EPS figure for the previous year. A separate earnings change ratio was computed for each of the years: 1967 - 1970. Figures were adjusted for stock splits and stock dividends.

To examine the stock market reaction to changes in reported EPS, closing weekly stock price data for selected lag and lead time periods were observed and gathered from Barrons. The observed stock prices were intially adjusted for stock dividends and splits and were subsequently adjusted for changes in general stock market conditions thrugh the use of a market index based on changed in Standard and Poor's 425 Industrial Stock Index. A stock price change ratio was computed by dividing an average of four adjusted closing weekly stock prices by a four week price average computed for a previous time period. Each model paired the earnings change rario computed for a given year with stock price change ratio computed over a selected lead or lag time periods. Since 4 years were covered by the study, each firm had four pairs of ER (Earnings Ratio)

and PR (Price Change Ratios) observations for each of current, short term, intermediate and long term models.

2.3.4 TECHNICAL ANALYSIS

These are also called chartists and as their name implies, use historical data to make charts with a view to identifying meaningful patters which they can use to predict future prices. This method presupposes that these trends tend to repeat themselves and sell, buy or hold actions can be taken before the patter is completed.

Trends so far identified are:-

(i) Tertiary Trends (Daily fluctuations).

(ii) Secondary Trends (Short Savings) run few week to few months.

(iii) Primary tends which occur over years.

The charts fall into the following categories.

(i) Line charts, where successive periods' prices are going up and the O's when they are going down.

i. **Moving Averages:**

This is based on establishing trends by studying and comparing the movement of current prices and a long term moving average change of prices. Although Fogler (1978) contends that the "golden goose" cannot be obtained by using moving averages, still technical analysts do favour their use to provide buy and sell signals.

ii. **Filter Rule Tests:**

This uses a fixed percentage to take decisions on buy and sell. When the price of a security rises by the fixed percentage, buy and hold decision will be made. This will be maintained until price falls by that fixed percentage before a sell decision can be made. Price movements that are less than this fixed percentage will be ignored. However, studies carried out by Blume (1968) concluded that the filter rules only work if brokerage commission and interim dividends effects are ignored.

Other technieques used are Relative Strength Analysis and Price Trading Volume Analysis. The former presupposes that some stocks' price rise relatively faster and fall faster in a bull and bear market respectively.

Buy and sell decisions can therefore be made on the basis of identifying such stock and the related periods. Price trading volume analysis is based on the contention that volume is a measure of investors' conception of the stock and it is really volume that moves prices even through, Margenstern (1970) found in a study that changes in prices of stock are not correlated with colume of transactions.

2.4 THEORIES OF THE STOCK MARKET

The controversy about the pricess which determines the prices of common stock started in the 1960's. If common stock prices followed a random walk, the knowledge about the sequence of past prices cannot be used to secure more than average returns on the stock exchange. The theory of efficient markets in which prices adjust rapidly to new information was first proved by Samuelson (1965) and Mandelbrot (1966). Subsequently over the years, three forms of the efficient market or random walk hypothesis were identified. The weak form, the semi-strong form and the strong form. The weak form states that current stock prices fully reflect all available relevant information. The semi-strong form goes further to state that all

published information is reflected in the prices of stock at any given time. The strong form asserts that even insider information cannot be used and profits made all the time.

2.4.1 THE WEAK FORM

The term 'random walk' was first used to describe commodity prices in a study caried out by Louis Bachelier (1990). He found evidence that neither buyers nor sellers could make profits and that commodity speculation was therefore "fair game". This also implied that the current price was unbiased estimate of its future price - the actual price minust exprected price could be zero in the long run. Further evidence for this was provided by Cowles (1937) and Kendall (1953). The direction of work in this regard changed from figurative analysis to charts. In two separate works by Roberts (1959) and Osborne (1959) indicated that there was similar pattern in the appearance of time series of stock prices and that created by correlating random numbers plotted on a chart. These were the familiar and shoulders formations and other patterns in both the random series and series representing stock prices. Other studies used data that was more extensive-test carried out by Moore (1962). Granger and Morgensten (1963)

and Fama (1965) further substantiated the tentative conclusions earlier reached. Morgensten (1963) for instance examined weekly changes of 29 randomly selected stock for 1951 - 58 and found a low serial correlation coefficient of price change between individual stocks of -0.06. Low coefficients mean the previous price changes cannot be used to predict future ones.

Fama (1965) on the other hand looked for signs rather than the size of successive changes to deduce the persistence of runs. He found that actual number of runs conforms to the numbers expected and is strong evidence in support of the random walk hypothesis which is also in conformity with the weak form. However, some evidence was found by Alexander (1961) and Dryden (1970) that filter technique produced considerable rates of return. However this failed to take into account the fact that dividends are costs rather than benefit when stock are sold short. Transaction costs and the determination of exact buy and sell instances are other constraints associated with this thinking. Therefore in general, the prices of stocks approximate to their intrinsic value and adjustment to information

KASU

is virtually instantaneous and successive prices assume a random pattern. However, this is subject to the assumption that information is costless and available to all interested parties and the market has more transaction costs. This is also implicit in the work of Bones, (1962) and Sprankle (1961) that the market will assurely be efficient. Although these conditions do not necessarily exist but they are not absolutely essential for an efficient market not for prices to fluctuate randomly. The weak form of the efficient market hypothesis merely asserts that current prices of stock fully reflect all that is implied by historical prices and that knowledge of it cannot be used as a basis in making higher than normal returns.

2.4.2 THE SEMI STRONG HYPOTHESIS

The semi strong hypothesis states that prices of stock fully reflect all publicly available information. The focus of the empirical tests is the speed of adjustment to new information.

Lantane and Tuttle (1967) concluded that common stock price change in the current time period are a reflection of forecasted future earning relative to

current prices. This was empirically investigaged by correlating stock price changes in the present time period with earnings changes in future time periods.

Ball and Brown (1968) found that the informational content of the annual income figure is relatively low, because investors have previously related to more current types of information. Gonedes (1971) reached a similar conclusion.

The result of the study by Brennan (1991) also found that accounting information more precisely accounting earnings, was part of the information used in forming prices although the data plot strongly suggested that the market anticipated the bulk of the information in the annual accounting numbers.

A more detailed reflection on the work by Ball and Brown (1968) is done here. Ball and Brown (1968) began by stating that the limitations of a completely analytical approach to usefulness are illustrated by the argument that income numbers cannot be defined substantantively that they lack meaning and are of doubtful utility. Because accounting lacks an all-embracing theoretical framework, dissimilarities in practices have eveolved. In particular they have had to deal with consolidations, leases, mergers, research

and development, price level changes. As a consequence net income is an aggregate of components which are not homogeneous. It is alleged to be a meaningless figure with no other definitive substantive meaning at all. The point is further buttressed by quoting what Canning (1929) had observed that what is not out as a measure of net income can never be supposed to be a fact in any sense at all except that it is the figure that results when the accountant has finished applying procedures which he adopts. However, he concedes that because net income is a number of particular interest to investors, the outcome we use as predictive criterion is the investment decision as it is reflected in security prices.

He therefore sets out to test the usefulness of accounting income by the behaviour of security prices in relation to it. He asserts that an impressive body of theory supports the proposition that capital markets are both efficient and unbiased in that if information is useful in forming capital asset prices, then the market will adjust assets prices to that information quickly and without leaving any opportunity for abnormal gain. Samuelson (1965) demonstrated that

a market without bias in its evaluation of information will give rise to randombly fluctuating time series of price. If, as the evidence indicates, security prices do in fact adjust rapidly to new information as it becomes available, changes in security prices will reflect the flow of information to the market. An observed revision of stock prices associated with the release of the income numbers is useful.

This method of relating accounting income to stock prices builds this theory and evidence by focussing on the information which is unique to a particular firm. Bail and Brown (1968) constructed two alternative models of what the market expects income to be and then investigates the markets' reactions when its expectations prove false.

Historically, the income of firms have tended to move together. The study further infers that about 50% of the variable affecting the level of average firm's earnings is associated with economy-wide effects. In this light, at least part of the change in a firm's income from one year to the next is to be expected. If in prior years, the income of a firm has been related to the incomes of other firms in a

particular way, then knowledge of that past relation, together with a knowledge of income of those other firms for the present year, yields a conditional expectation for the present incomes of the firm.

Some changes in income result from financing and other policy decisions made by the firm. Since the impacts of these two components of change-economy-wide and policy effect are felt simultaneously, the relationship must be estimated jointly.

Market wide variations in stock return are triggered by the release of information which concerns all firms. The evaluation of the income report as it relates to the individual firm, its contents and timing should be assessed relative to changes in the rate of return of the firm's stocks not of market wide effects. The rate of return in the stock of a firm may be estimated by its predicted value from the linear regression of the monthly price relative of the firm's common stock on a market index of returns.

The residual form the OLS (Ordinary Least Squares) regression measures the extent to which the realised return differs from the expected return, conditional

upon the estimated regression parameters and the market index.

Three classes of data are of interest: the contents of income reports, the dates of the reports announcemnts, and the movements of security prices around the announcement dates.

The result demonstrates that the information contained in the annual income number is useful in that if actual income differs from expected income, the market typically has reacted in the same direction, i.e. if real income is higher prices rise and if lower prices move down.

However, most of the information contained in reported income is anticipated by the market before the annual report is released. In fact anticipation is so accurate that the actual income numbers does not appear to cause any unusual jumps in the Abnormal Performance Index in the announcment month. The market not only begins to anticipate forecast errors early in the 12 months preceding the report, but also that it continues to do so with increasing success throughout the year.

Evidence on the extent of autocorrelation in the stock return residuals would suggest that the market's reaction to information about a particular firm tends to occur rapidly.

The results demonstrate that the information contained in the annual income number is useful in that it is related to stock prices. But annual accounting reports are only one of the many sources of information available during a year, one half or more is captured in that year's income numbers, the content is therefore considerable.

However, the annual income report does not rate highly as a timely medium, since most of its content (85 to 90%) is captured by more prompt media which perhpas include interim reprots. Since the efficiency of the capital market is largely determined by the adequacy of its data sources, it is not unexpected that the market has turned to other sources which can be acted upon more promptly than annual net income.

2.4.3 THE STRONG FORM

This states that stock prices do not only reflect what is publicly known but also what is only known by insiders.. Tests of the strong form consist of the performance of portfolios managed by groups which might have special information. Consistent superiority of performance would suggest that certain persons or groups have superior access to information not reflected in the prices of stocks. A study by Irvin Friend and his associates at the Wharton School (1971) concluded that on the average the performance of mutual funds studied was insignificantly different from the performance of an unmanaged portfolio with similar asset composition.

Another related study was carried out by William P. Sharpe (1966) who also studied the performance of 34 mutual funds for the period 1954 - 1963. He used the analytic framework developed by Linter (1965) known as the Capital Asset Princing Model. This simply defines the relationship between return and the level of risk. Thus higher risk attracts correspondingly higher returns. He found that only 11 funds did better if expenses are considered while 23 did worse than the

Dow-Jones Industrial Average. The theoretical relationship between risk and returns for efficient portfolios is illustrated in the diagram below.

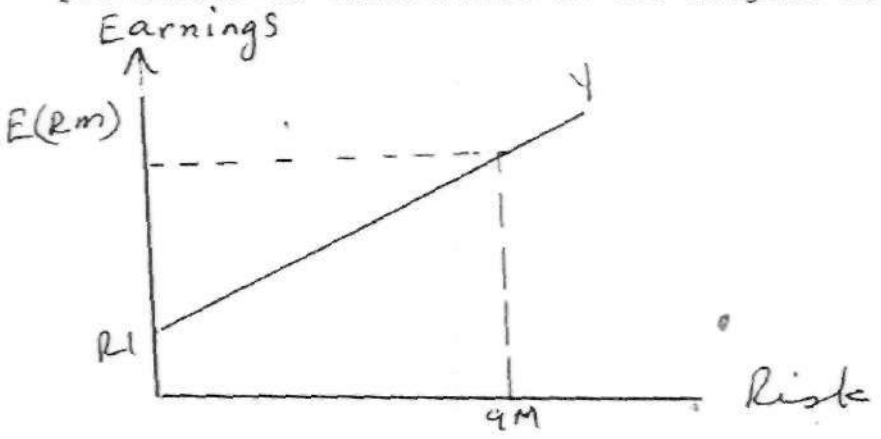


Figure II: Capital Asset Pricing Model

Line R1Y = Capital Market Line which describes the relationship between expected rates of return on efficient portfolios and risk.

E(RM) = The Expected return on related risk level of GM.

GM = The level of risk corresponding to an expected return E(RM).

R1 = Risk free rate of return.

The figure above relates the level of risk to returns. Line R1Y shows the acceptable return at a certain level of risk. Any return lower than the level os risk is rejected.

It is also important to note that the Capital Asset Pricing model groups business according to risk. The CAPM implies that a firm is priced according to its business risk. Furthermroe, there is portfolio separation. Although original developments made restrictive assumptions about the nature of the utilities needed to achieve portfolio separation, it is now know that the property known as linear risk tolerarance.[2]

A further comprehensive study of mutual fund performance was carried out by Jensen (1986) of 115 mutual funds for the period 1955 - 1964. Jensen's results indicated that mutual funds on the average did not out-perform randomly selected portfolios of equal riskiness; however there remains the possibility that some mutual funds consistently out-perform randomly selected portfolios.

In conclusion, it can be safely stated that there is sufficient evidence in support of the weak form and semi-strong forms of the efficient market theory while there is controversy about the strong form. From Samuelson (1965) and Mandelbrat (1966) through to studies by Lantane and Tuttle (1967) and finally by Brennan (1991) the studies strongly support the weak form and semi-strong form.

Virtually all the results of the studies suggest that more work needs to be done to confirm the strong form or otherwise.

This study will therefore, using data on the Nigerian Stock Exchange for the relevant period, determine whether the Nigerian situation conforms with results of studies done elsewhere with regard to the weak and semi strong forms. It will also determine if the result, unlike others, turns up evidence in support of the strong form.

CHAPTER THREE

METHODOLOGY

3.1 DESCRIPTION OF RESEARCH APPROACH

The nature of this research is to undertake a study of the relationship between the price of shares and earnings per share on the Nigerian Stock Exchange. The main objective is to highlight how prices of stock react to changes in earnings per share at various levels for various companies, sectors and the stock market as a whole. The focus is on earnings per share of the firm which is calculated as the earnigns after interest and taxed divided by the number of shares outstanding multiplied by 100 to convert to kobo per share. The analysis covers a five year period from 1985 - 1989. End of the year share prices are used.

3.2 RESEARCH DESIGN

The variables considered in this study are the share prices, and earnings per share of the firm. The methodology is as outlined below:

(i) <u>Selection of a representative sample of securities on the Nigerian Stock Exchange for the entire period under study from 1985 - 1989.</u> In order to ensure that the sample

has no bias, the spread or dispersion must be normal without skewness.

This means that the entire population must be put into perspective and each item must have an equal chance of being selected. Another attribute of good sampling taken into account is to ensure that sample is not too small because a bigger sample, tends to have attribute which approximate the population very closely.

Where the population is stratified into major groups, it is necessary to follow the strata so that skewness is not introduced. That is to avoid a few large items dominating the sample. The mode of selection of the sample to satisfy these conditions is outlined below in greater detail under the appropriate heading in 3.21 below.

(ii) **Collection of Share Price Data, Earnings Per Share 1985 - 1989.** Some of the most important attributes of data for research are accuracy and relevance. It precision and accuracy are not strictly adhered to in a study of this nature, then, the result of such a study may not be

reliable and the outcome not depandable. However, sources of data in this area are not diverse. It is also well know that access to data in Nigeria is usually difficult. The approach that appears to be subject to independent verification is therefore the most usual that can be sourced and used for carrying out of a study.

Hitherto, publicly available financial information was only published by the Financial Times. It is only very recently that other regular fiancial journals have sprang up. For consistency, however, the choice of one source in the past means that the same source is used in preceding periods. This is also fully discussed under the relevant sections below.

(iii) **Construction of Stock Market Index**

Until quite recently, there was no consistent properly constructed stock index for the Nigerian Stock Exchange until the Financial Times have started the construction of a weekly index. Records available indicate that construction of this index started after the base year for this study 1985. Thus it became necessary to construct a different

index for the purpose of this study rather than introduce the new index by Financial Times half way. This index would have been distorted since its base year after 1985. It would therefore have meant that the index being used is not wholly that of the Financial Times but only partly so.

Secondly, the index used here is annual, while that constructed by Financial Times is weekly. It would therefore have become necessary to work out an average of the indices for the whole year to use for the study since the selection of one of the weekly indices may not be representative of the annual picture. This would have been cumbersome and as a result, an entirely new index has been constructed.

(iv) Graphical Work and Choice of Frequency

Ordinarily, daily, weekly or at least monthly price and earnings information would have been very appropriate in a study of this nature. This would have enable reactions following earnings announcements for each firm to be recorded. These figures

are however not readily available but this has been overcome by studying price reactions relative to earnings from one year to another and between firms. Such a comparison should achieve the much desired result of establishing reactions after each year's earnings announcement and infact also highlight other variables that impact on the price of shares. See Appendix II.

(v) Analysis of Tends Noted in the Study

The economic picture for the period under consideration is carefully described. Political and social events of importance are also brought to the fore.

Government policy on various sectors of the economy are put forth and their possible effect on the share price of the industry concerned. This, ofcourse, is borne out of the fact that the primary theme of this study is to establish the relationship between share price and earnings per share. Isolating this effect clearly implies giving appropriate recognition to the other variables that have a bearing on share price and as much as possible quantify this

so that the net effect can be said to be attributable to earnings per share.

3.3 SAMPLE

The period under study is from 1985 - 1989. As at the beginning of th period which is January 1985, shares of a total of 93 companies were quoted on the Nigerian Stock Exchange.

This increased to 96 companies in 1986 and by 1987 topping at 101 by 1988 and 1989. Twenty industrial sectors could be identified in the base year 1985. For purposes of consistency the population was stratified under the twenty identified sectors from which at least one firm was selected. Within each sector, one company was selected at random. This sample of 20 stocks are found to be representative enough for the period under consideration from 1985 - 1989. The companies that make up this sample are listed in Table 1 on page 38.

3 4 DATA AND STOCK PRICE

Stock prices of quoted companies in the sample were obtained on annual basis from the Business Times

of the relevant dates. These are also plotted on the graph together with the stock prices. This is expressed in units of kobo per share in conformity with Financial Reports.

The use of price date from secondary sources is also in conformity with what obstains elsewhere as observed by Roll Ricahrd 1977.

3.5 CONSTRUCTION OF THE MARKET INDEX

In order to construct an index, the sample used for this purpose should not show any bias. This means it should reflect all the sectors quoted on the Stock Exchange. This has been done by selecting at least one quoted Company from each sector. Secondly, it is considered that since each sample is about 10% of the strata (secotr) from which is drawn, and the overall sample is therefore 10% of the population, the expectation is that the sample is therefore 10% of the population, the expectation is also that the sample is the representative of the individual sectors and the overall population as well - unbiased sample.

It is not deemed necessary to use market value weighting because it has been demonstrated that no material difference results from using equal weighting as in this case and other value weighting.

There has to be consistency in the method of overaging used from one period to another and this has been the case throughout the period covered by this study. The initial average for 1985 of 78 was assigned a value of 100 and all those of the following years were obtained by relating them to this base year as a percentage of 78. The results obtained are presented in Table III on page 75 and plotted in Figure I on page 78. The stock of Union Bank had to be adjusted for a stock split from ₦1.00 to 50k per share for the years 1985 - 1988.

The mvoement of the market index is carefully analysed on the graph to obtain clear picture of general trends in the stock market.

The mvoement of individual stock is then carefully analysed on the graph with the related earnings per share to have a picture of how the price relate to changes in earnings for each sector and the particular security under study. All the detailed data, tables and analysis are presented in the appendix.

4.10 HISTORICAL BACKGROUND OF COMPANIES SAMPLED

In order to fully understand the analysis contained in the latter part of this thesis, it is necessary to present the history of each company in the sample. This is also expected to help in highlighting the general changing economic landscape of each sector in terms of growth and reliance. This is the subject of the first part of the Chapter on research findings.

4.11 LEVENTIS MOTORS

Initially on its inception, Leventis Motors was involved in the importation and distribution of a wide variety of motor vehicles and motor-cycles. In recent times, the Company's response to Nigeria's changing economic landscape has led it to other fields of endeavour like supermarket chain throughout the country, makreting all variety of goods both imported as well as those locally produced. Leventis Motors, is however, still involved in assembly and distribution of motor vehicles and motor-cycles. This activity

is now only part of a wide range of undertaking generally called the Leventis Group. The Leventis Group with such a clearly demonstrated ability to weather the storm in the turbulent Nigerian economy, raises every expectation that its financial performance would be impressive. It has a great deal in common with other Companies in the Automobiles and Tyres sector like United Trading Company that has shifted resources to Supermarkets and diversified their activities generally for the sake of survival.

4.12 **UNION BANK**

This is the new name for what was known as Barclays Bank Nigeria Limited, a subsidiary of Barclays Bank International of the United Kingdom. It was established in Nigeria next only to First Bank. The change in its name reflected the impact of politics on corporate life of Nigeria particularly subsidiaries of foreign owned companies. This name change was at a time when the government of the day directed all its arms to withdraw all deposits and accounts with this Bank because of

the operations of its parent body in apartheid South Africa. In order to pacity the Government and the Nigerian public, a change in name was effected. That the Bank did not collapse and indeed still emerged as one of the 3 big banks in the country probabaly confirms the wisdom about the change of name. Because of its international connections, and a strong capital base, its appeal to the Nigerian business community is not expected to wane. Its performance also closely reflects that of the other banks in this sector like United Bank for Africa and First Bank of Nigeria both also with French and British connections respectively. The performance of the purely indigenous banks differs slihgtly as they are bedevilled by local in-fighting and heavy loan defaults.

4.13 NIGERIA BREWERIES

This is the biggest and oldest brewery in Nigeria with factories in Kaduna, Aba and Lagos. In pre-Independence Nigeria, it was the only brewery industry in Nigeria with complete monopoly. Its most famous product - Star - is referred to in advertisement

jingles as Nigeria's most favourite beer. In the early sixties, several brewery industries sprung up and many more came up in the seventies and by the eighties, brewing became a cottage industry for some families most especaioly in the Southern part of Nigeria. However, because of its pioneering status and network of factories in the country, Nigeria Breweries still accounts for a substantial share of the market. In the 80's, there was a ban placed on the importation of wheat and barley which are essential raw materisl for the brewery industry. This adversely affected this sector, but they quickly adapted to the use of local raw materials. The various governments both Federal and State also make conscious efforts to encourage the growing of wheat locally. Some notable success was achieved especially in Kano. Hopes were that Nigeria would become self-sufficient if the production of these inputs are supplemented by local grains.

4.14 WEST AFRICAN PORTLAND CEMENT

This is the second oldest cement company in Nigeria after Nkalagu. It has two cement works located in

Ewekoro and Shagamu which put together has the biggest installed capacity in the country. Cement industries in the country have a history of serious management crisis that usually culminate in their collapse or dependence on government subvention in order to continue with their operations. The likes of Nkalagu, Ukpilla, Sokoto Cement, are examples of this state of affairs. In most cases, the crisis occurs after the management of such compnaies has been indigenised. West African Portland Cement is however only partially indigenised, while the technical division is still under expatriate control. This appears to have helped because the Company has seen no crisis since its inception. During this period under study, there was a ban on the importation of cement imposed by government. Thus profits are mainly a function of production since there is no imported cement to compete with the local plants whose total installed capacity is less than overall aggregage demand in the economy. In the seventies, two new cement works located in Benue and Bauchi States came on stream under the nemaes of Benue Cement and Ashaka Cement. In spite of this, the installed capacity of the sector cannot meet the growing demand in the economy.

4.15 INTERNATIONAL PAINTS

This is one of the early paintmakers. It started with the importation and distribution of paint with nationwide distribution network. It later turned to the manufacture and distribution of paint locally. Its activities still span the whole country as it uses its former well established outlets and reputation. It also closely resembles other companies in the sector like ICI, Berger Paints, among others. Most of them have resorted to local production and distribution in order to survive and prosper.

4.16 K. CHELARAMS

This was s supermarket chain dealing in various goods but dominated by textiles. From its inception it was dealing in both imported and locally manufactured goods. This situation alone had the capability of allowing it ample flexibility in the event of changes in economic fortunes of the country. Also as a foremost Company dealing in textiles, which happened to be a growing sector of the economy, its future was clearly bright. Thus in the eighties when there was a ban placed on imported goods, the Company was able to

cope while the likes of Kingsway Stores were unable to cope and had to fold up. All of these might just be a blessing to the other surviving companies in the sector.

4.17 THOMAS WYATT

This is a Company whose Apex Mills dominated paper production in the 50's and 60's. Its name became synonimous with paper production. In this position, it hadn't the need to advertise or do aggressive marketing. In the seventies and eighties through conscious efforts the Federal Government established a paper mill at Jebba and another one yet to take off at Iwopin. However, the aggregate demand for paper far exceeds the combined installed capacity of the existing facilities. Another important fact is that this is one arew where demand keeps expanding with growth of the economy. It is therefore a sector destined to remain robust all things being equal.

4.18 UNITED AFRICAN COMPANY

Popularly called UAC, this Company was and still is the biggest conglomerate of this nature in Nigeria.

KASAIM

Its activities cut across all spheres of life in Nigeria from textiles, hardward to marketing of produce. It has its roots in early British Colonial days and remain the flagship of British-Nigeria commerce. Its position which serves as a bridge between these two very friendly countries makes it promising.

4.19 JULIUS BERGER

This Company also started operations in the country in the sixties. It is of German origin and only a subsidiary of the parent company based in Germany. It was the oil boom that brought about the rapid expansion and transformation of this Company in the seventis into a construction giant. As a premier designing and construction company in the country, Julius Berger was responsible for the design and construction of virtually all the network of flyovers in Lagos. With the creation of Abuja as the new Capital Territory, the focus of its activities shifted to that city to continue with the construction boom. The creation of new States in Nigeria also gingers up the demand in this sector and with emphasis on infrsstructural facilities, Berger and the entire sector will remain in a boom for some time.

Another advantage of these large construction firms is that entry into the industry is relatively difficult because it is capital intensive. Other smaller competitors do not have the equipment to handle large construction work. However, all companies quoted in this sector have the technical know-how and the equipment required to handle such jobs which gives them a rosy future.

4.20 LEVER BROTHERS

A subsidiary of the multinational firm, Unilever, started operations here way back in the early sixties selling a variety of toletries from detergents to toilet soap. These are products that are always in demand. Initially, these were imported, but soon factories were established in the country that produce almost all the products marketed by the Company. It probably had the most elaborate marketing network throughout the length and breadth of the country.

With the improved network of roads, it is expected to be more effective in the use of all its area offices which are located all over the country. The Company and the sector as a whole is clearly a growth sector with unlimited prospects.

4.21 FOOD SPECIALITIES

Food Specialities is one of the few companies involved in the production and sale of beverages and infant foods. From importation and distribution, it went on to local manufacture and distribution, using mostly local raw materials. It benefitted greatly from the ban on the importation of infant foods. Using this conducive atmosphere, it was able to consolidate its base. Operating in a typically Nigerian setting, the production of all companies in this sector is far less than the aggregate total demand. The sector can expand and use the increasing quality manpower available in the economy.

The population growth rate in Nigeria has also not abated in spite of government campaign to enlighten its citizens on the dangers of over-sized families. The demand for food and beverages is therefore still on the increase and since the sector can effectively sell all its produces with little or no advertisement it is also one of the very profitable sectors.

4.22 BATA

This is the shoemaker with a strong national outlook. Its target public includes school children and adults. It does not pretend to be fashion conscious. Its brands of shoes are practical and customised to meet the above mentioned target public. Since schools are hardly out of date, the demand for its products had been unwavering. However, the ban on importation of leather and low production at home combine to make it difficult for capacity utilisation to be high. Prices of raw materials have been rising but the springing up of more shops and dealers across the country means it is still an expanding sector.

Suffice it to say that the period under study witnessed a growth in Gross National Product. This made more Nigerians able to afford more of these luxury items and may continue to stimulate growth in this sector.

4.24 BENTWORTH FINANCE

This area is one which has not been properly developed and explored in Nigeria. The money market outside of the Banking sector is yet to be fully exploited. It is only in very recent time that the

sector is experiencing a boom. The boom period however falls outside the one under study. Suffice it to say that the period under study witnessed a growth in Gross National Product. This made more Nigerians able to afford more of these luxury items and may continue to stimulate growth in this sector.

4.25 BLACKWOOD HODGE

The area of operation of this Company is the distribution of heavy and light machinery, procurement of capital from Banks to purchase machinery is not easy. Merchant banks do not extend credit unless there is a very sound collateral security to back up the request. Similarly, Nigeria is a relatively poor country where capital formation is low as people generally do not generate much surpluses to save. But Government patronage helps to keep this sector alive.

4.26 VAN LEER CONTAINERS

Packaging is a boom business in Nigeria. This is because of the fact that bulk purchase into the country have to be re-packaged in manageable containers for retailing in addition to packaging required by

by local production. The demand is unlimited as certain raw materials, also need to be packaged for export and local distribution.

The major constraint appeared to be availability of the raw materials used for making containers and packages. In most cases, these are not available locally and have to be imported. During the period under study, there was deregulation of the foreign exchange market. This led to considerable depreciation of the Naira against most major internation currencies. Companies in this sector, therefore, had to contend with high production costs from the raw materials imporation. This created problems of sales until the Federal Government threw a life-line by way of removing duty anbd other tarrifs on this class of raw materials.

4.27 MOBIL OIL

The oil industry is the chief foreign exchange earner for the Nigerian economy. Since the price increases recorded in 1973 as a consequence of the Arab-Isreali war, the major oil producing countries

have come together to form the oil cartel otherwise called Organisation of Petroleum Exporting Countries (OPEC). This enables them tailor supply to suit demand and thus maintain stable prices. In Nigerian, petroleum products are highly subsidised. Thus, the oil companies still make a great deal of profit and prospects for this sector is good.

4.28 BEECHAM

Pharmaceuticals and Animal Feeds is also a growth industry in Nigeria. With the rapid population growth and growing medical needs, the demand for drugs and dressings is on the increase. Similarly, the protein needs of the country is also increasing with the population. Most of the drugs are however not manufactured locally in the country. They are only packaged here. High costs have tended to make itr unaccessible. Fake ones have tended to reduce demand and revenue of genuine ones.

4.29 DAILY TIMES

This is probably the oldest printing and publishing house in Nigeria. While it was privately owned, it

recorded impressive earnings. However the Federal Government took over the Company on the one hand and a stiff competition in the seventies and eighties meant that there must be a change in strategy. The good thing is conservatism which has tended to make the public stick with Daily Times. The newspaper is still the largest daily. Proper organisation has also made it a profitable venture.

The sector itself does not appear to be doing as well as Daily Times. In particular, the ones that only print but cannot advertise for others are at a disadvantage. However, authors complain about long delays in releasing books sent in for publication. This gives the impression that demand still outstrips supply and the industry is on course.

4.30 APPRINT

Nigerians have always preferred foreign made goods to the local ones. This has generally meant that local industries face competition from foreign companies and this has greatly affected the textile

industry. Until recently, some textile industries were even closing down because of poor demand. With the restriction of textiles and new found love of Nigerians for local designs the industry is on the move once more. During the period under review, there was profound patriotism fever sweeping the country. It bacame a thing of pride to wear designs made in Nigeria. This has been profitable for some companies but preference for foreign fabric has still cut into demand. Cost have generally helped the Nigerian textile industry whose products have been generally cheaper attracting the less privileged that are in greater number.

CHAPTER FIVE

RESEARCH FINDINGS

5.1 GENERAL BEHAVIOUR OF THE NIGERIA STOCK EXCHANGE

The trend of stock prices on the Nigerian Stock Market has been bullish. The market recorded upswings of 8% in 1986, 20% in 1987, 39% in 1988 and 25% in 1989. The remarkable rise in the annual figures however falls within the period when the structural adjustment programme was introduced. This led to a liberalisation of foreign exchange market, decontrol of fuel prices and agricultural inputs. Prices therefore increased rather rapidly in the economy and it is therefore not clear if investment in portfolio that is a representative sample of the Stock Exchange would have provided a hedge against inflation during the period. A similar study for the period 1977 - 1982 concluded that inflationary figures were actually higher than the increase in stock market indices.[4]

However, the general upward trend was a result of the growth of the economy as represented by earnings per share recorded during the period under study. With the exception of Bentworth Finance and Blackwood Hodge that

recorded no earnings per share for 1987, the general trend has been increasing earnings per share for a majority of the companies. For instance, in the sample of 20, 11 showed steady growth of earnings per share while 7 showed a stable amount of earnings per share with slight fluctuations while the two already mentioned here actually turned up nil earnings per share in 1987. These two also bounced back with impressive results in subsequent years of 1988 and 1989.

In general, 1987 was difficult year for the Nigerian economy which was experiencing a shortage of foreign exchange with falling oil prices. Results of the higher cost of foreign exchange was beginning to show on the performance of companies resulting in lower earnings per share figures. Out of the sample of 20, 10 companies recorded lower earnings per share which contrasts with the bullish trends.

Finally, it is important to mention here that the general outlook for the world economy in 1987 was gloomy with the Wall Street Crash of October 19, 1987. Speculation was rife about the imminence of stock market crash signals. Interest rates were put at 21%, inflation at an all time high, depreciation of the Naira by 25%. The slogan was

"disinvest in corporate shares" and look to bonds and insurance/pension funds for safety.

However, there was no crash but indeed from the figures available earning per share showed a decisive position change in 1989. 17 of the 20 companies sampled showed an increase in earnings per share over the previous two years: 1987 and 1988. This indicates that the general economy was recovering from a recession. In the sections below, each sector and related result is discussed in detail.

5.2 THE PICTURE 1985

In this year, earnings per share range from nil in the Computer and Office Equipment sector to 65.6K per share in the Punblishing sector. Share prices however do not reflect this situation. The explanation is probably becuase in Nigeria, the ownership of shares is not taken as an investment to make a profit from. It is regarded as property to be inherited through generations. The shares are therefore not always put through market forces. In other sectors like Petrol Marketing which enjoys the highest market price of 158K, in spite of its modest earnings per share of 29.9K, it is very clear that industrial factors play a dominant role where the future of petroleum appear

brighter than all of the others.

Perhaps where share prices and earnings relate most closely is in the conglomerates and packaging sectors. Here, similar earnings of 11K per share turn up share prices of 72K and 56K respectively which indicates some relationship. Similarly, Chemical and Paints sector with earnings per share of 9K turn up very similar prices of 54K and 50K share prices respectively. Other striking examples of similarity in earnings per share are Building Materials and Conglomerates. These have earnings per share of 15.8K and 11.4K and share prices of 70k and 72K respectively.

5.3 THE PICTURE 1986

The general outllok in 1986 shows that earnings per share of 16 out of the 20 compnaies sampled has increased while share prices of only 14 have increased in comparison to corresponding figures of 1985. Further analysis shows that 13 out of 14 where earnings per share has increased, there is also an increase in share price which implies a relationship between earnings per share and share price. Looking at the picture from one sector to another, Building Materials and Chemical and Paints with similar earnings per

share figures of 20.4K and 20K respectively also show share prices of 72K and 71K also indicating a relationship between earnings and prices per share. Other similar examples are a decrease in earnings per share to 15.5K from 48K in the Brewery sector corresponds with a decrease in price per share to 99K from 131K in that sector. It must be noted that complete harmony is not established between earnings per share and share prices because of the effect of other factors mentioned elsewhere.

5.4 OUTLOOK IN 1987

In this year only, 9 sectors show an increase in earnings per share over previous year's figure. The stock market however is in a bullish mood as once again, 16 sectors show increase in share prices over 1986. Virtually all companies that show increase in earnings per share also show an increase in share price over previous year. It is also interesting to note that where there is a decrease in earnings per share such a decrease is relatively small and the general trend of growth momentum remains more or less unabated which reflects in investor confidence in the price per share of the companies. This is also amply demonstrated by the Petroleum Marketing sector which shows

a decrease in earnings per share from 24.4K to 21.2K but share price still increases from 139K per share to 152K per share in years 1986 and 1987 respectively. It is therefore clear that while earnings per share show a relationship with price per share, other factors like economy have a significant effect as well.

5.5 ANALYSIS OF 1988 SITUATION

In the year, once again, 10 companies out of the total sample of 22 show an increase in earnings per share. Once again all these also show remarkable increase in share prices. However, as noted before, this is a year of general rise in prices of shares on the Nigerian Stock Market. This is because with the exception of Bata and Daily Times, all other companies in the sample show increase in share prices. The increase in share prices probably reflect government policy that has set up a body known as the Technical Committee on Privatisation and Commercialisation to privatise some selected government owned companies.

This probably has thrown the market in a bullish mood as investors' expectation are raised and they believe government policy will positively impact on the stock market.

Stock prices therefore rise as a result of government policy even before privatisation itself takes off. Bata and Daily Times, whose share prices actually fell have both shown very unstable earnings per share figures and wide fluctuations between the years 1985 - 1988. This unsteady earnigns per share figures appear to have negative effect on the share prices of the Companies - confirming that even in the best economic circumstances, earnings affect the price of shares.

5.5 THE YEAR 1989

Fourteen companies show increase in price per shares on ther stock market while two - Union Bank and Mobil Oil - remain the same. This state of affairs is not surprising because by the end of 1989, the first few batch of shares from the privatisation exercise have been issued and the shares on the stock market have increased. The market still shows a general rise in share prices and the cycle is still on an upsurging. It is important to note that earnings per share have also generally been on the increase. For instance, the average earnings per share in 1985 is 21.08K compared to 28.18K in 1989. This shows

a general increase even as shown by the index graph on page 79. As earnings have increased so has share prices over the relevant period. The general conclusions and recommendations are contained in Chapter 6.

SAMPLE SECURITIES

	SECURITY	SECTOR
1	Leventis Motors	Automobile & Tyres
2	Union Bank	Banking
3	Nigerian Breweries	Breweries
4	WAPCO	Building Materials
5	International Paints	Chemical & Paints
6	K. Chellarams	Commercial
7	Thomas Wyatt	Computer & Office Equip
8	UAC	Conglomerates
9	Julius Berger	Construction
10	Lever Brothers	Cosmetics & Toiletries
11	Food Specialties	Food & Beverages
12	Bata	Footwear
13	Alumaco	Industrial/Domestic
14	Bentworth Finance	Investment Companies
15	Blackwood Hodge	Machinery Marketing
16	Van Leer Containers	Packaging
17	Mobil Oil	Petroleum Marketing
18	Beecham	Pharmaceutical
19	Daily Times	Publishing
20	Afprint Nig Ltd.	Textiles

TABLE 1

EARNINGS PER SHARE

1985 - 1989

	NAME OF COMPANY	SECTOR	1985	1986	1987	1988	1989
			K	K	K	K	K
1	Leventis Motors	Automobile & Tyres	3.2	9.9	6.1	6.1	13.3
2	Union Bank	Banking	53	87.4	98.5	20.9	42.0
3	Nigeria Breweries	Breweries	48	15.5	20.9	49	15.1
4	WAPCO	Building	15.8	20.4	29.1	23.1	33.3
5	International Paints	Chemical & Paints	8.15	20.0	12.7	30	36.8
6	K. Chellarams	Commercial	9	13.2	8.5	20	26.9
7	Thomas Wyatt	Computer & Office Equipment	-	32.9	29.5	32	37.5
8	UAC	Conglomerates	11.4	15.4	9.6	40	40.2
9	Julius Berger	Construction	9.3	9.5	13.2	9.4	25.9
10	Lever Brothers	Cosmetics & Toiletries	14	33.6	45.1	43.8	66.0
11	Food Specialities	Food & Beverages	14	39.2	46.9	72.4	49.8
12	Bata	Footwear	27.9	35.9	30.3	18.0	18.8
13	Alumaco	Industrial/Domestic	1.9	25.7	26.0	18.9	26.4
14	Bentworth Finance	Investment Companies	11.5	1.4	0.0	14.8	13.0
15	Blackwood Hodge	Machinery Marketing	50.4	48.9	0.0	6.7	6.7
16	Van Leer Containers	Packaging	11	18.3	19.8	25	25.1
17	Mobil Oil	Petroleum Marketing	29.9	24.2	21.2	17	17.6
18	Beecham	Pharmaceutical	25	29.4	25.0	16	16.3
19	Daily Times	Publishing	65.6	7.6	14.9	13	13.3
20	Afprint Nig. Ltd	Textiles	20.7	28.2	50.7	89.9	39.7

TABLE 11

ANNUAL STOCK MARKET PRICE FOR EACH OF SELECTED SAMPLED STOCK

1985 - 1989

	NAME OF COMPANY	SECTOR	1985	1986	1987	1988	1989
1	Leventis Motors	Automobile & Tyres	41	30	50	80	60
2	Union Bank	Banking	133	155	205	170	170
3	Nigeria Breweries	Breweries	131	99	112	273	323
4	WAPCO	Building Materials	70	72	122	120	140
5	International Paints	Chemical & Paints	54	71	75	108	143
6	K. Chellarams	Commercial	50	56	66	75	65
7	Thomas Wyatt	Computer & Office Equipment	110	144	112	167	142
8	UAC	Conglomerates	72	96	50	214	226
9	Julius Berger	Construction	54	52	55	72	102
10	Lever Brothrs	Cosmetics & Toiletries	113	140	157	206	320
11	Food Specialities	Food & Beverages	93	110	185	220	266
12	Bata	Footwear	85	87	123	118	122
13	Alumaco	Industrial/Domestic	51	66	113	82	107
14	Bentworth Fiance	Investiment Companies	57	48	50	74	77
15	Blackwood Hodge	Machinery Marketing	21	31	25	53	69
16	Van Leer Containers	Packaging	56	65	61	101	122
17	Mobil Oil	Petroleum Marketing	158	139	152	155	155
18	Beecham	Pharmaceutical	107	120	127	136	176
19	Daily Times	Publishing	41	43	50	39	50
20	Afprint Nig.Ltd	Textiles	60	65	107	142	50

TABLE 111

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 SUMMARY

In summary, we have attempted to undertake an analysis of the Nigerian Stock Exchange for the period 1985 - 1989. The sample is drawn in such a manner that all 20 sectors are represented. The data is from a secondary source and this is in conformity with the procedure employed by most previous researchers. The model used is that of charting and is extensively used and read for purposes of obtaining results and arriving at conclusions as well as recommendations which are considered in the next paragraph.

6.1.1. From the results presented in the last chapter, we note that out of the 20 companies sampled, 15 start with earnings per share above zero and in each the graphs show that increasing earnings per share are generally reflected in bullish increase in share prices. Daily Times and Blackwood Hodge start off with losses and their share prices reflected this by being quoted below their per value. For the remaining three - Leventis Motors, Union Bank and Nigeria Breweries, the similarity between share price graph and earnings per share is less striking. The following observations and conclusions can therefore be drawn.

6.1.2 The general movement of stock prices has been found to be on the upward trend which is indeed in line with the growth in economic activity. During the period under review earnings per share have also generally being consistently on the increase. In order to provide a good linkage between price of shares and earnings

per share, we compute the average price for each sector over the five year period.
Similarly, we compute average earnings for each sector over the same period. The result is plotted on a graph which is reproduced in figure 4A.

6.1.3 It can be seen that the average earnings relate closely to the price. Thus, when average earnings are low, the average share price is also low. Where average earnings are high the average price is also high as can be read directly from the graph.[1]

6.2 CONCLUSION

6.2.1 THE WEAK FORM OF EFFICIENT MARKET THEORY

We noted that earnings per share have been increasing in general, together with share prices. The earnings per share are determined by the general economic climate. thus we can conclude that share prices generally fully reflect historical information which is already reflected in the conomy at any given time. Any set of portfolio therefore, would not have yielded above average returns. This of course indicates that the Nigerian Stock Market conforms with the weak form of the Efficient Market Theory.

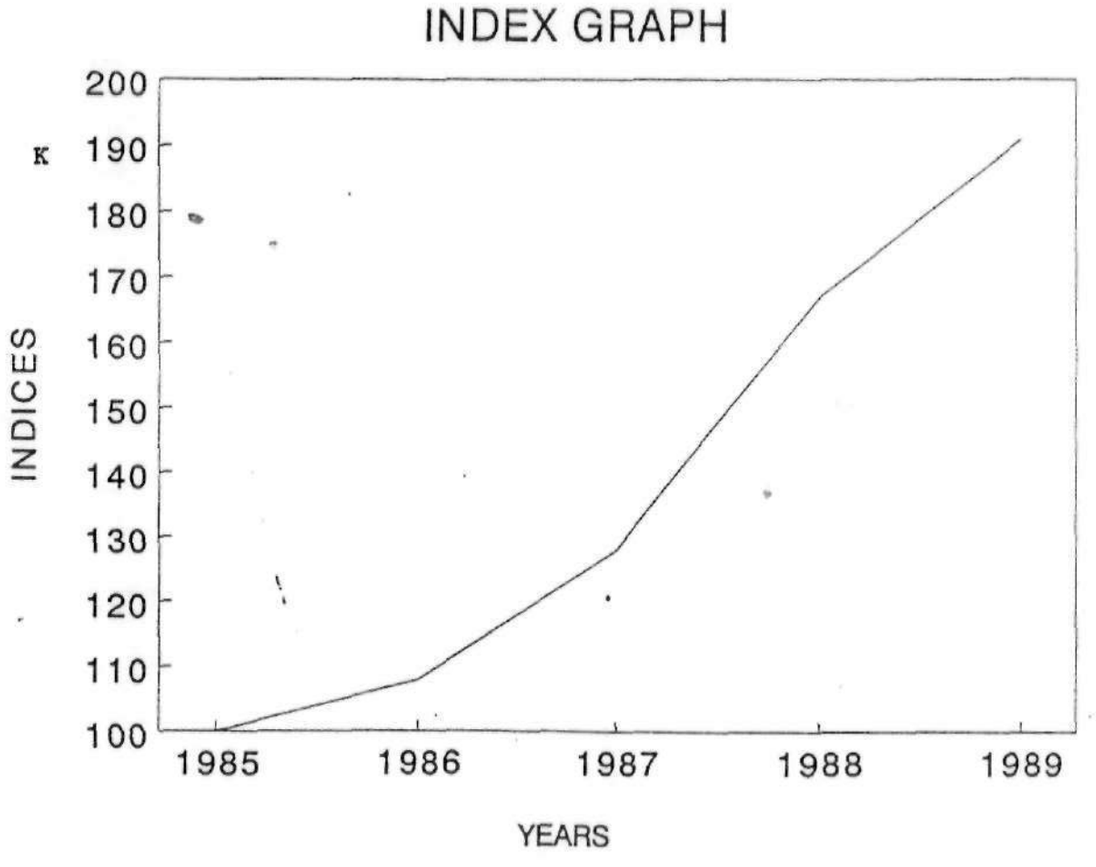

INDEX GRAPH
INDICES
200
190
180
170
160
150
140
130
120
110
100
1985
1986
1987
1988
1989
YEARS

FIGURE 3

6.2.2 THE SEMI-STRONG FORM

Difficulty in obtaining the exact timing of announcement of porfits and published accounts for the entire sample renders any definitive conclusion on this impossible. However, the fact that the graph of share prices and earnings per share move in sympathy points to the fact that is published information is reflected in the prices of stock at any given time. More detailed work is however necessary to establish the reaction of the market to earnings announcements.

6.2.3. THE STRONG ROOM

Testing of this is clearly beyond the scope of information in this study. However it is instructive to point out that trading volume on the Nigerian Stock Exchange is still very low and the use of Insider Information could suffer limitation, firstly because one may not get the shares to buy. this is because as explained elsewhere, Nigeria regards shares as Fixed Assets and trading with them is not very regular.
Secondly, if the price of shares appreciates, it would still be difficult to dispose of it since there are few willing buyers. Probably such a test could be carried out after the work of the Committee on Privatisation and Commercialisation is completed. Then there would be more investors and better awareness among Nigerian investors. Availability of detailed information might improves as well.

6.3 RECOMMENDATIONS

Taking into account the constraints on this work outlined in Chapter One, the objective set out has been achieved to an appreciable extent. However, further research in this area is necessary and the following steps are recommended to make it more effective and meaningful. These actions are mainly by Securities and Exchange Commission (SEC) Nigerian Stock Exchange and Brokers.

(i) The Nigerian Stock Exchange Commission should set up a Task Force to collect information on all companies quoted thereon from the inception of the Commission to date. Such data include published accounts, interim and final annual dividends, issue of bonues shares, shares splits, daily share prices, etc. Researchers in the area shall be given free access to such information.

(ii) Efforts to create Area Offices in State capitals with library facilities to ease the work of scholars who want to undertake research in this area.

(iii) To increase publicity of its activities by liaising with the electronic media for daily announcement of business done on the Stock Exchange.

(iv) Need to fund further work on the Nigerian Stock Exchange particularly those factors that influence changes in prices of Stock in detail to quantity their respective relationship with the price of shares.

REFERENCES

1. **Neane Edwin H./Wiginton Jone** 1981

- Financial Management Theory and Strategies p.135

2. **Cass D. and Stinghitz J.E.**

- "The Structure of Investor Reference and Assets Returns, and Separability in Portfolio Allocation: A Contribution to the Pure Theory of Mutual Funds"
Journal of Econoic Theory (1970) 122-160.

3. **Roll Richard** 1977

- "A critique of the Asset Pricing Thorys' Tests".
Journal of Financial Economies 4 March 1977 129 - 176.

4. **Osaze, B. and Isimbabi M.** 1983

- The Nigerian Stock Exchange and Investment Analysis - 1983

8.	Brennan, M.J.	"A Perspective on Accounting and Stock Prices". The Accounting Review (January 1991) pp. 67 - 79.
9.	Bristow, R.J.	The Stock Exchange and Investment Analysis (1968) pp. 13.
10.	Business Times	December 1985 pp. 13 September 1986 pp. 21 December 1987 pp. 21 December 1989 pp. 33
11.	Canning	Accounting and Stock Prices (1929) pp. 28
12.	Coules III Alfred	Common Stock Indices 1871 - 1937.
13.	Cowles A. & Jones	"Some A Posterior Probabilities in Stock Market Action" Econometrics, Vol. 5 (July 1937) pp. 280 - 94.
15.	Federal Republic of Nigeria Official Gazette issued under Decree No. 25 Schedule 1 Parts 1 & II	Privatisation and Commercialisation Decree 1988
16.	Financial Times	December 1990 page 18
17	Fisher	"New Stock Market Indexes pp. 204a.
18.	Pegler	(1978) Op. Lit. pp. 3 - 4.
19.	Gonedes, N.J.	"Some Evidence on Investor Actions and Accounting Messages" Part 2 The Accounting Review (July 1971) pp. 550

20 Graham B. Dodd David and Castle Sidney — Security Analysis (1962) pp. 28

21. Granger C.J. & Margenster, O. — "Predictability of Stock Market Prices" Health Lexington Books 1970.

"Special Analysis of New York Stock Market Prices."

22. Ibbotson, R.G. & Singuefield, R.A. — "Stock, Bonds, Bills and Inflation Historical Returns 1926 - 1978 Financinal Analysis Research Foundation, (1982).

23. Ibid, pp. 86

24. James-Bones, A. — "A Theory and Measurement of Stock Option Value" (Ph.D. Disc. University of Chicago 1962).

25. Jensen, M. — "The Performance of Mutual Funds in the 1945 - 64" Journal of Finance Vol. 23, No. 2 (May 1968) pp. 389 - 416.

26. Kendall, M.G. — "The Analysis of Economic Time Series, Part 1: Prices"

Journal of the Royal Statistical Society Vol. 96, part 1 (1953) pp. 11 - 25.

27. King, B.F. "Market and Industry Factors in Stock Price Behaviour" Journal of Business, Security Prices: A Supplement Vol. 39 Vol. 1 Part 2 (January 1964) pp. 139 - 190).

"The Latent Statistical Structure of Security Prices" Unpublished Ph.D. Thesis, University of Chicago, 1964.

28. Kinsman, R. Low Risk Profits in High Risk Times (1985) pp. 55 - 56.

29. Lantane, H. and Tuttle, D. "An Analysis of Common Stock Ratios". Southern Economic Journal January 1967 pp. 343 - 347.

30. Linter, J. "Security Prices, Risk, and Maximal Gains from Diversification". Journal of Finance, Vol. 20 No. 4 (Dec. 1965) pp. 587 - 616.

31. Lorie, J.H. and Hamilton, M.T. — The Stock Market Theories and Evidence. Richard D. Irwin Inc. (1973).

32. Mandelbort, B. — Forecasts of Future Prices, Unbiased Markets and Martingale Models. Journal of Business Security Prices: A Supplement, Vol. 39, Part 2, January 1966 pp. 242 - 55.

33. Moore, A.B. — "Some Characteristics of Changes in Common Stock Prices in Paul Cootner, The Random Character of STock Market Prices (Cambridge, Mass: The MIT Press 1964) pp. 139 - 61.

34. Okigbo, P. — "The Capital Market and the Nigerian Economy" in the New Nigerian of Tuesday, 9th October, 1979, page 12.

35. Osaze, B. and Isimbabi, M. — The Nigerian Stock Exchange and Investment Analysis (1983) pp. 47 Publisher: Nigerian Stock Exchange and Investment Analysis pp. 11 - 34.

The Nigerian Stock Market and Investment Analysis (1983).

36. Osaze, B. An Article "Could the Stock Market Collapse in Nigeria" Business Times Dec. 14, 1987 page 21.

37. Osobore, M.F. "Brownian Motion in the Stock Market" Operation Research Vol. 7 (March - April, 1969) pp. 145 - 73.

38. Pike, W. Why Stocks Go Up and Down (1983) pp. 160.

39. Regan, D.T. A View from the Street (New York NY: New Amercican Library) 1972 Chapter 1 & 2.

40. Roberto, H.V. "Stock Market "Patterns" and Financial Analysis: Methodological Suggestions" Journal of Finance, Vol. 14 No. 1 (March 1959) pp. 1 - 10.

41. Samuelson, P. "Proof that Properly Anticipated Prices Fluctuate Randomly"

42. Scholes, M. "The Market for Securities: Substitution versus Price Pressure and the Effects of Information on Share Prices" Journal of Business Vol. 45, No. 2 (April 1972) pp. 179 - 211.

43. Sharpe, W.S. "Mutual Fund Performance" Journal of Business, Security Prices: A Supplement Vol. 39, No. 1, Part 2 (January 1966) pp. 119 - 138.

44. Spenkel, C. "Warrant Prices as Indicators Expectations and Preferences". Yale Economics Essays Vol. 1 (1961) pp. 178 - 231.

45. Spike, W. Why Stocks Go Up (and Down) (1983) pp. 203.

46. Working, H. "A Random Difference Series For Use In the Analysis of Time Series". Journal of the American Statistical Association Vol. 29, March 1934 pp. 11 - 24.

APPENDIX (FIGURES 4 - 24)

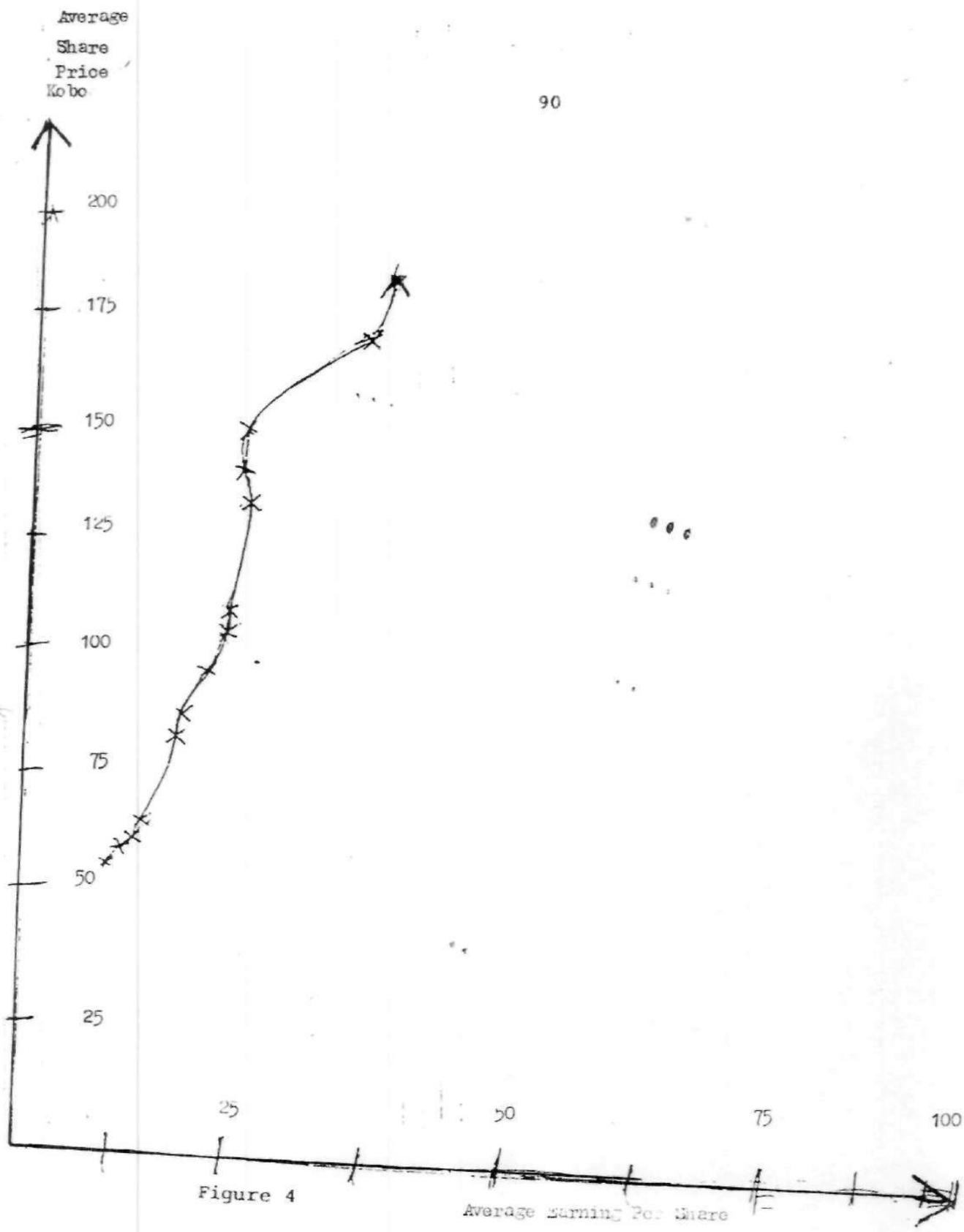

Average
Share
Price
Kobo
200
175
150
125
100
75
50
25
25
50
75
100
Average Earning Per Share

Figure 4

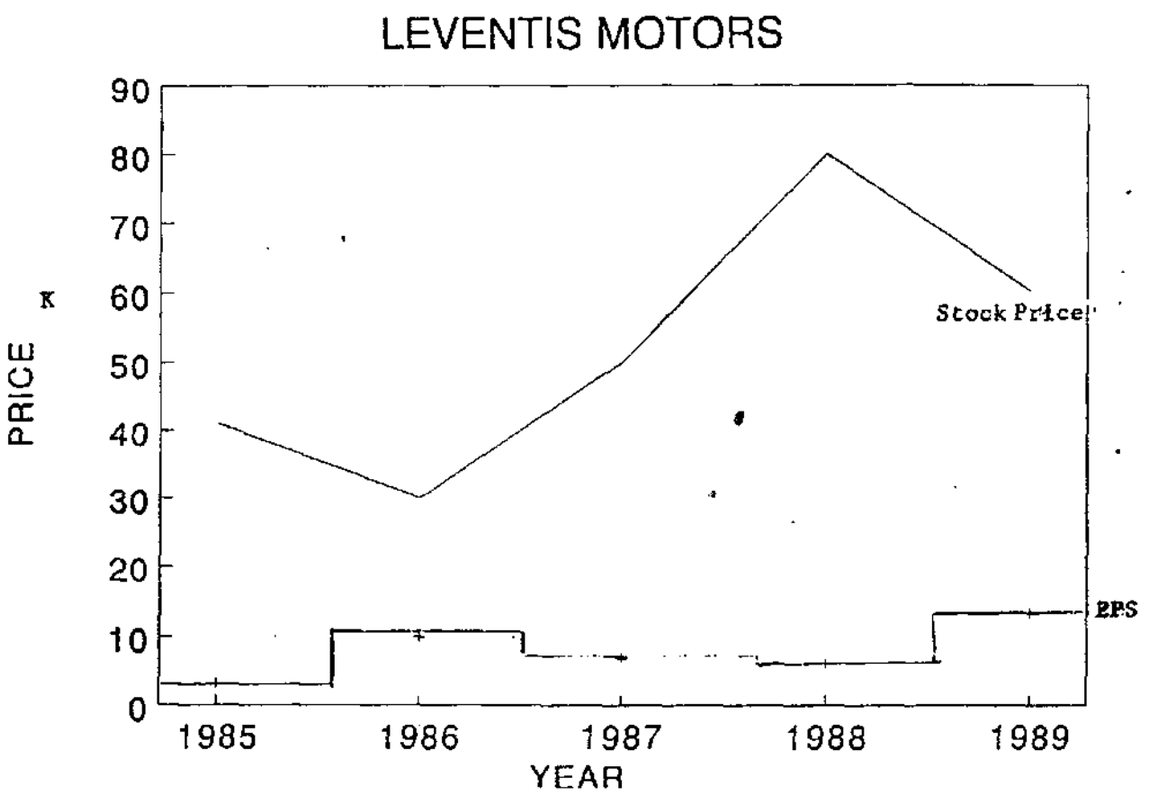

LEVENTIS MOTORS
PRICE
K
90
80
70
60
50
40
30
20
10
0
1985
1986
1987
1988
1989
YEAR
Stock Price
EPS

FIGURE 5

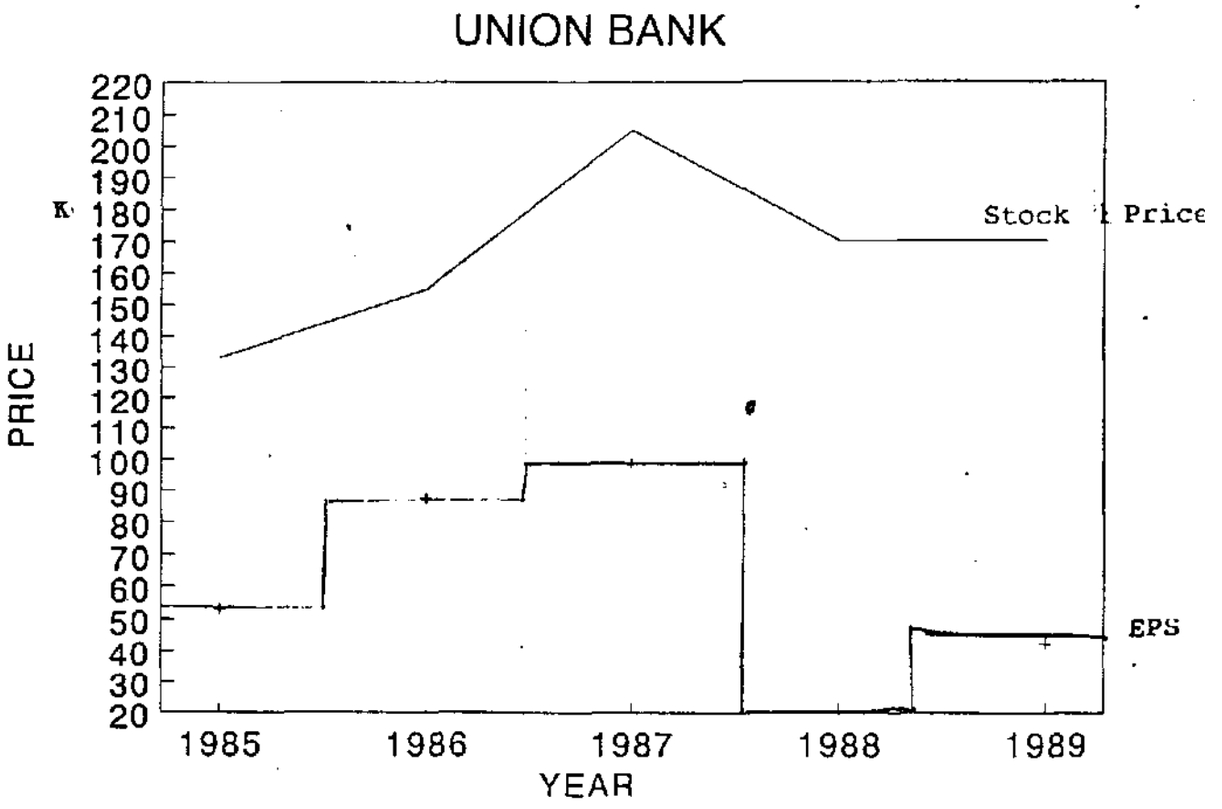

UNION BANK
PRICE
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
Stock Price
EPS
1985
1986
1987
1988
1989
YEAR

FIGURE 6

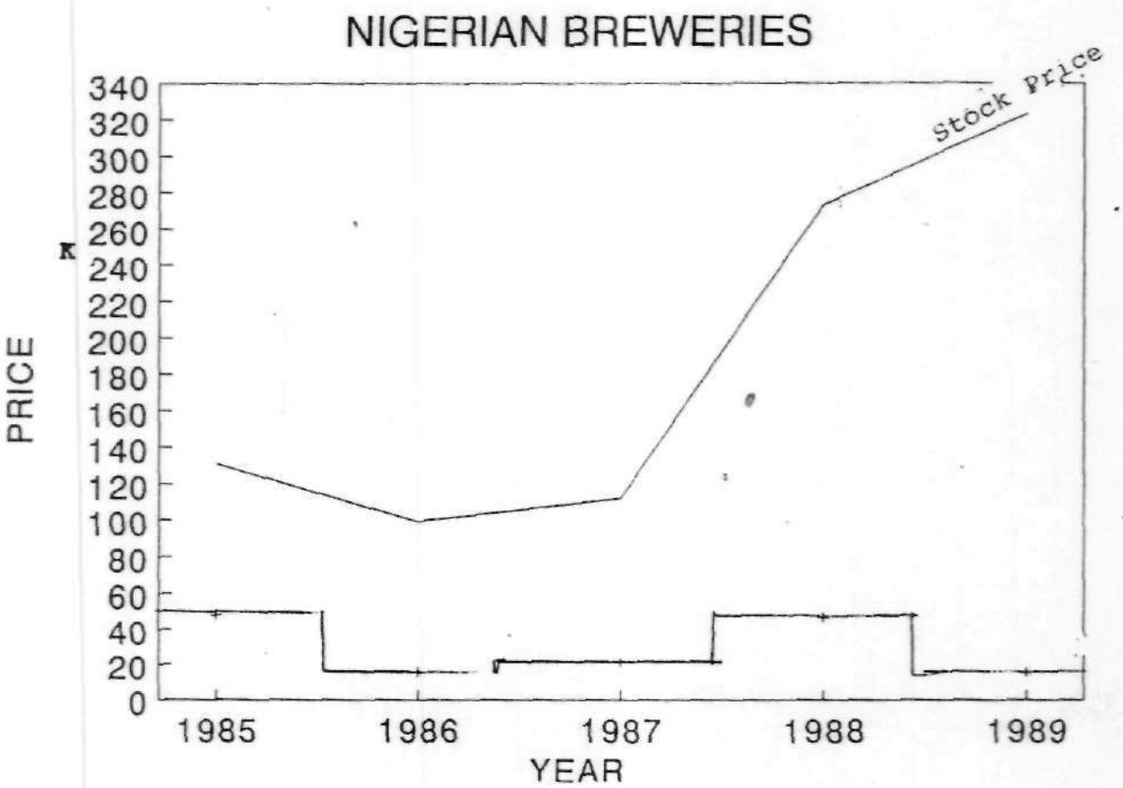

NIGERIAN BREWERIES
Stock Price
PRICE
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
1985
1986
1987
1988
1989
YEAR

FIGURE 7

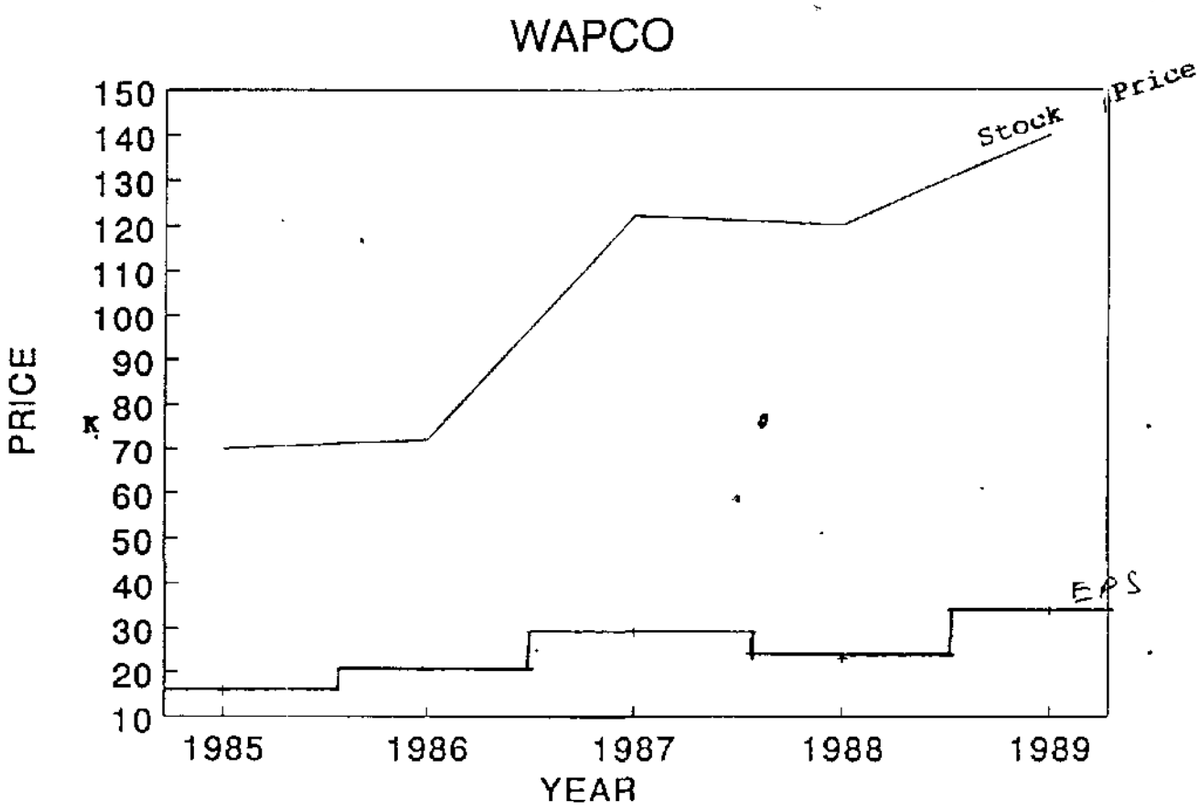

WAPCO
PRICE
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
1985
1986
1987
1988
1989
YEAR
Stock Price
EPS

FIGURE 8

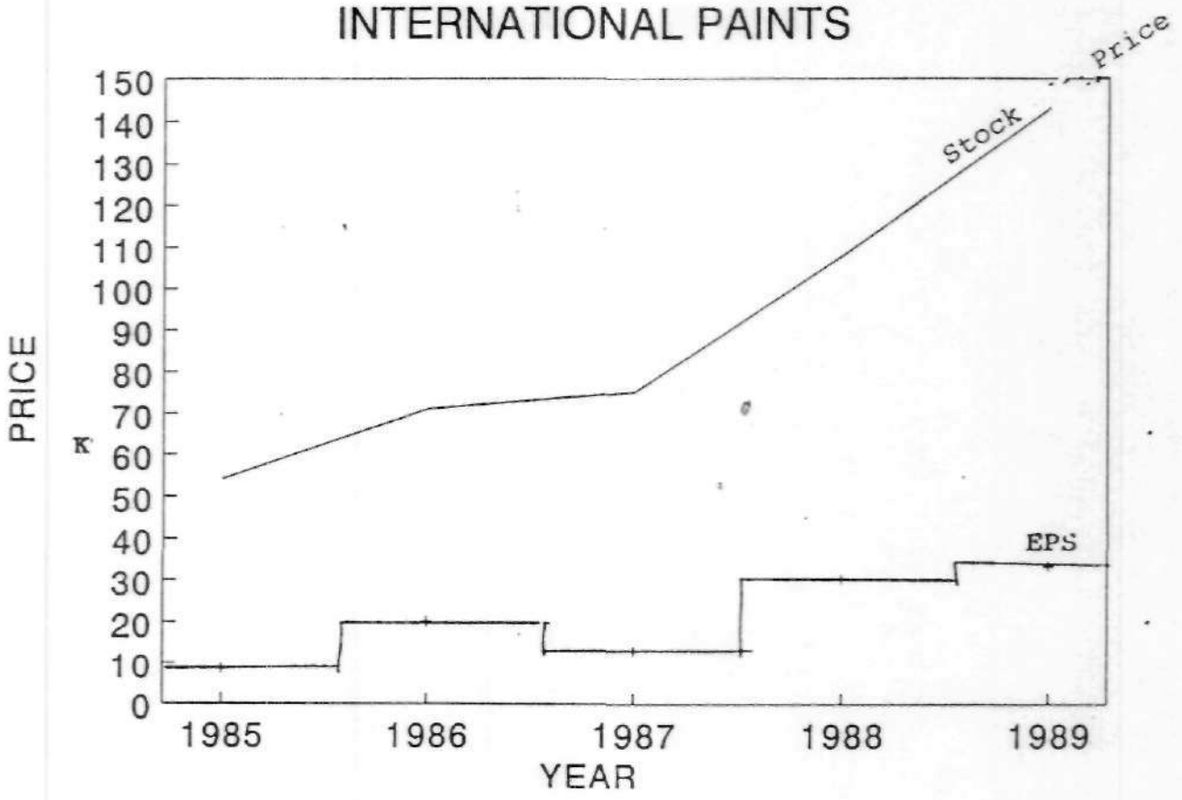

INTERNATIONAL PAINTS
PRICE
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
1985
1986
1987
1988
1989
YEAR
Stock Price
EPS

FIGURE 9

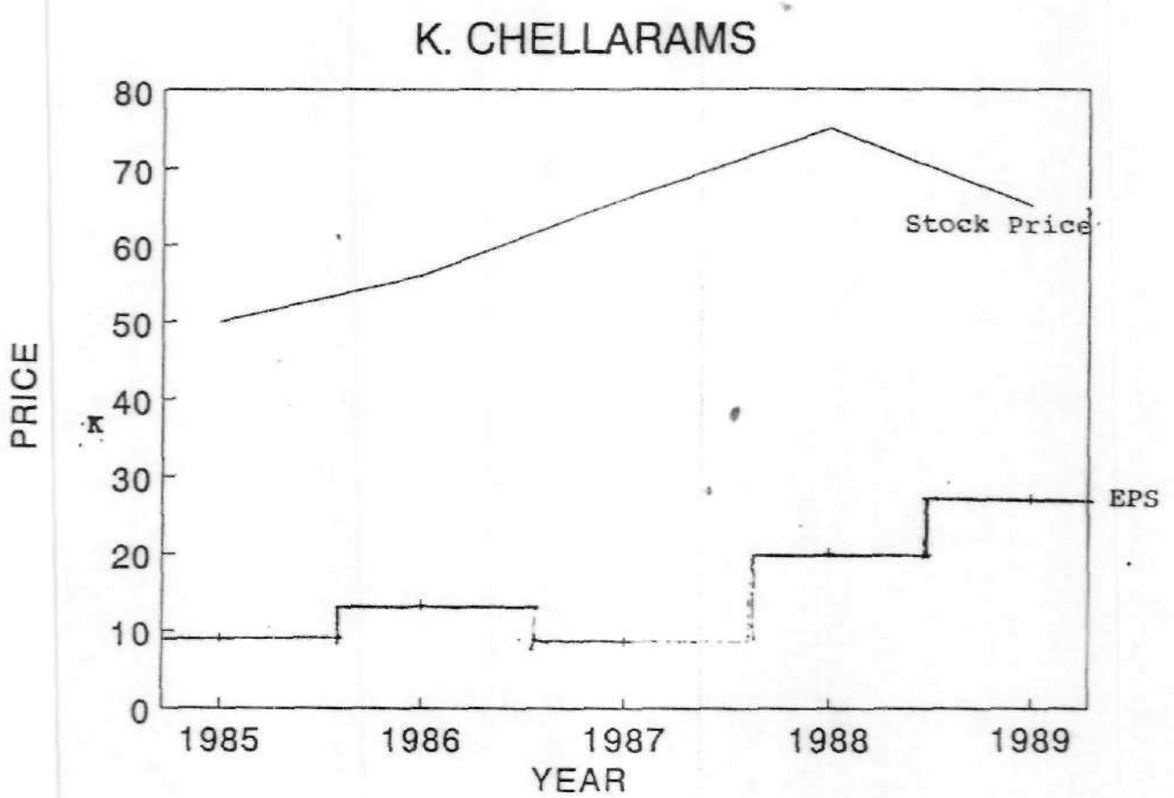

K. CHELLARAMS
PRICE
80
70
60
50
40
30
20
10
0
Stock Price
EPS
1985
1986
1987
1988
1989
YEAR

FIGURE 10

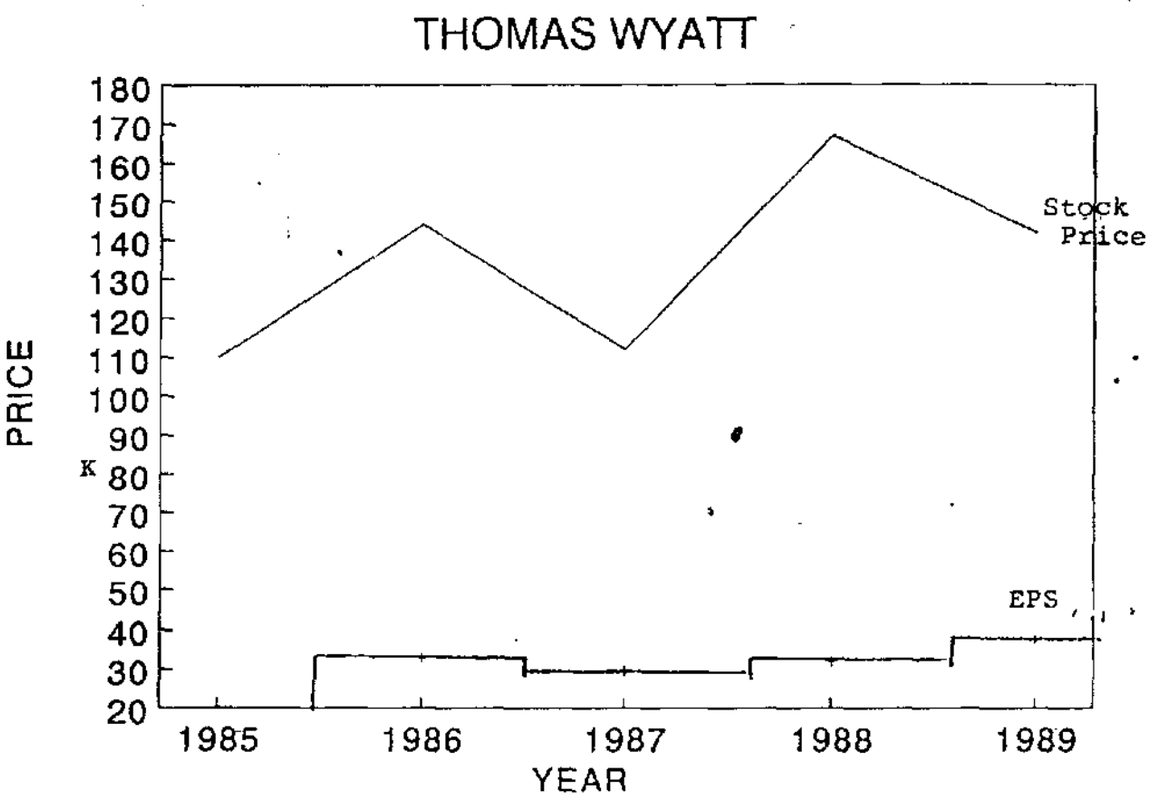

THOMAS WYATT
PRICE
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
K
Stock Price
EPS
1985
1986
1987
1988
1989
YEAR

FIGURE 11

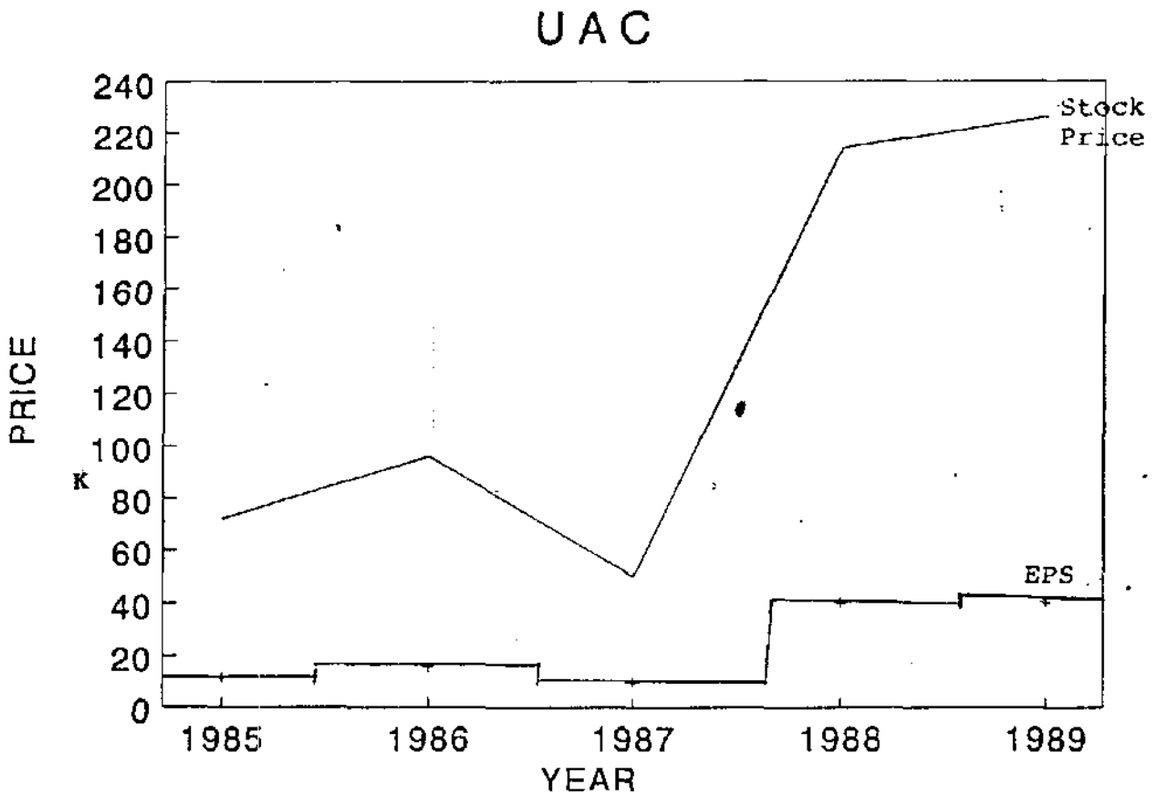

UAC
240
220
200
180
160
140
120
100
80
60
40
20
0
PRICE
K
Stock
Price
EPS
1985
1986
1987
1988
1989
YEAR

FIGURE 12

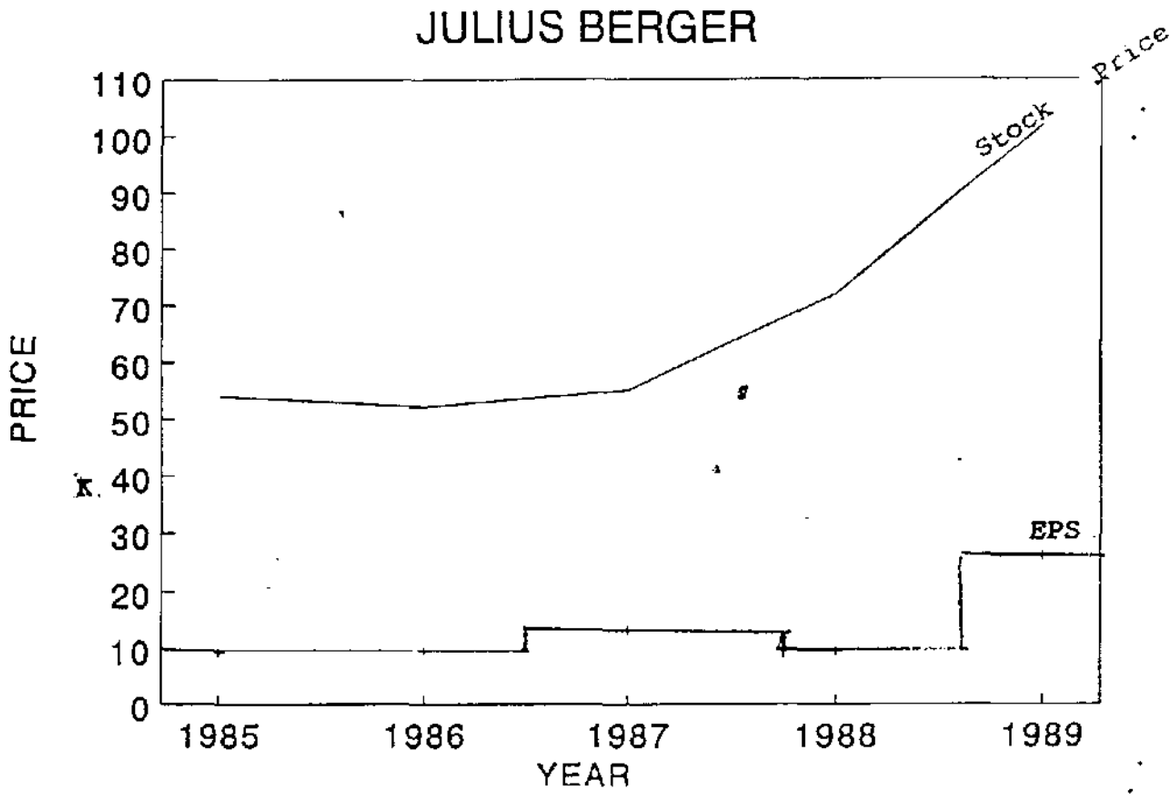

JULIUS BERGER
PRICE
110
100
90
80
70
60
50
40
30
20
10
0
1985
1986
1987
1988
1989
YEAR
Stock Price
EPS

FIGURE 13

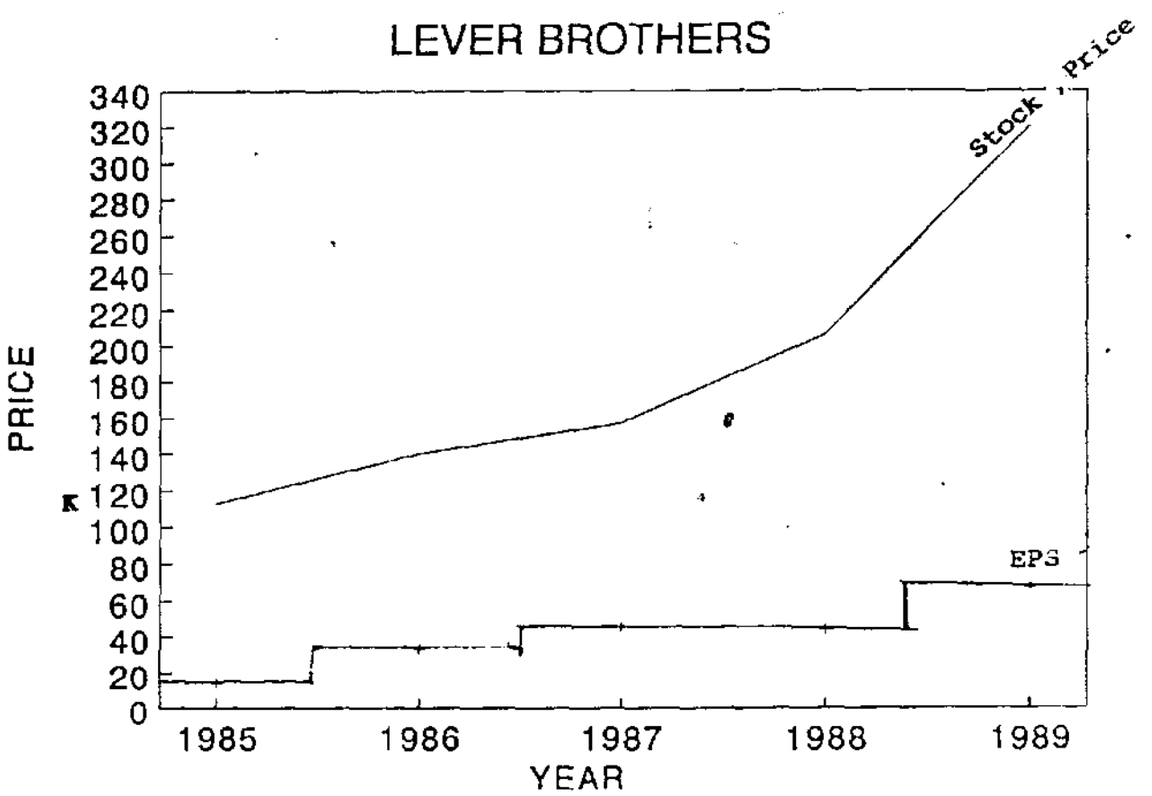

LEVER BROTHERS
Stock Price
EPS
PRICE
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
1985
1986
1987
1988
1989
YEAR

FIGURE 14

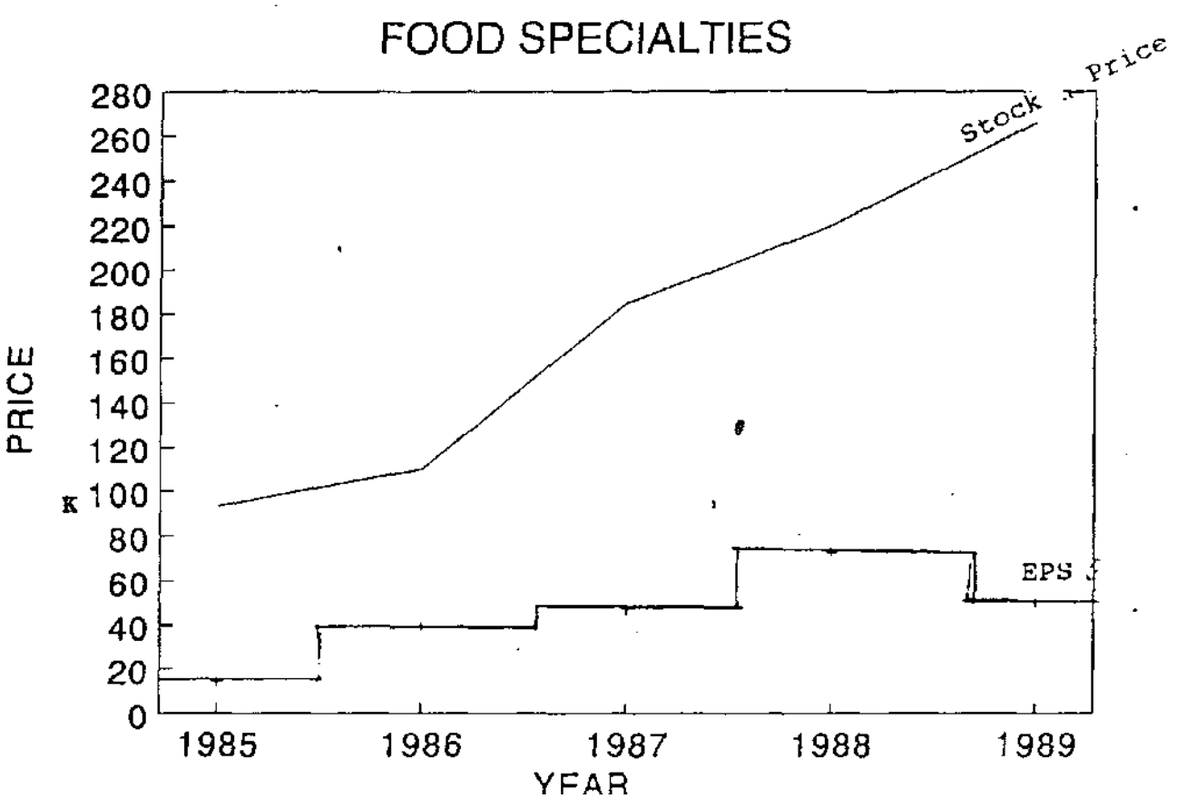

FOOD SPECIALTIES
Stock Price
EPS
PRICE
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
1985
1986
1987
1988
1989
YEAR

FIGURE 15

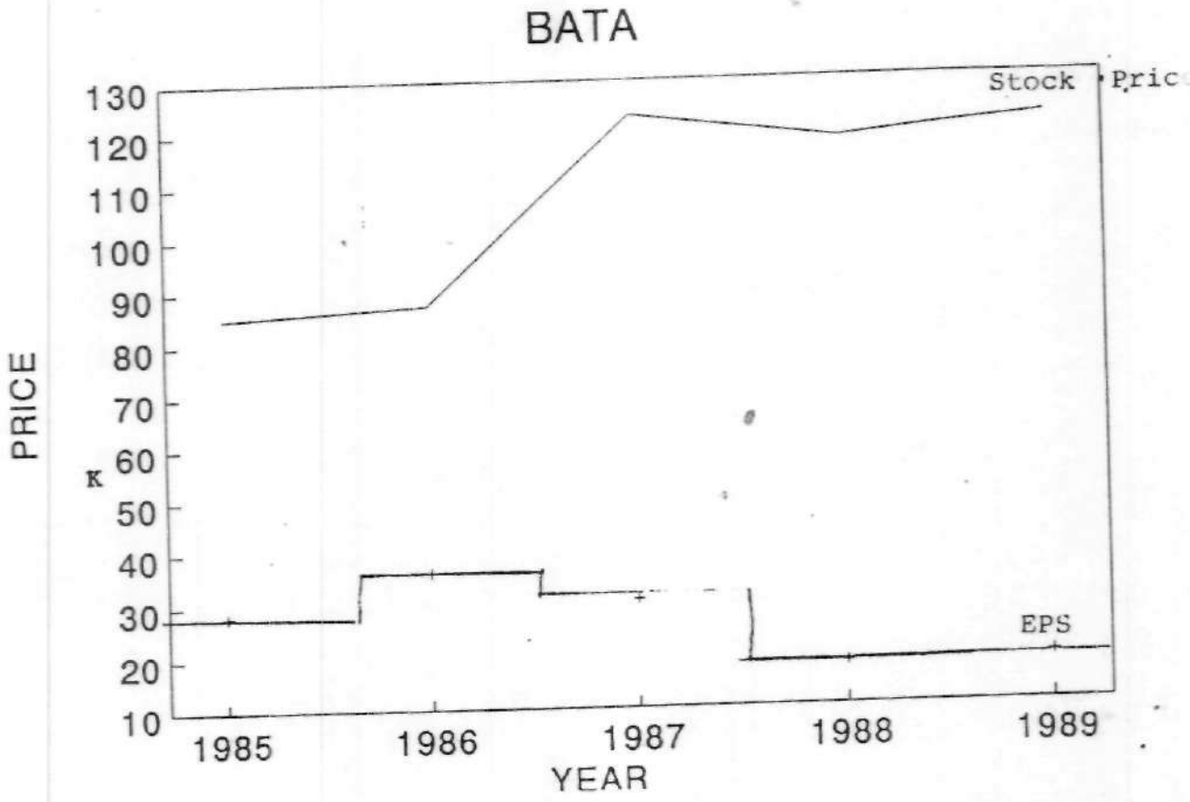

BATA
Stock Pric
EPS
PRICE
K
130
120
110
100
90
80
70
60
50
40
30
20
10
1985
1986
1987
1988
1989
YEAR

FIGURE 16

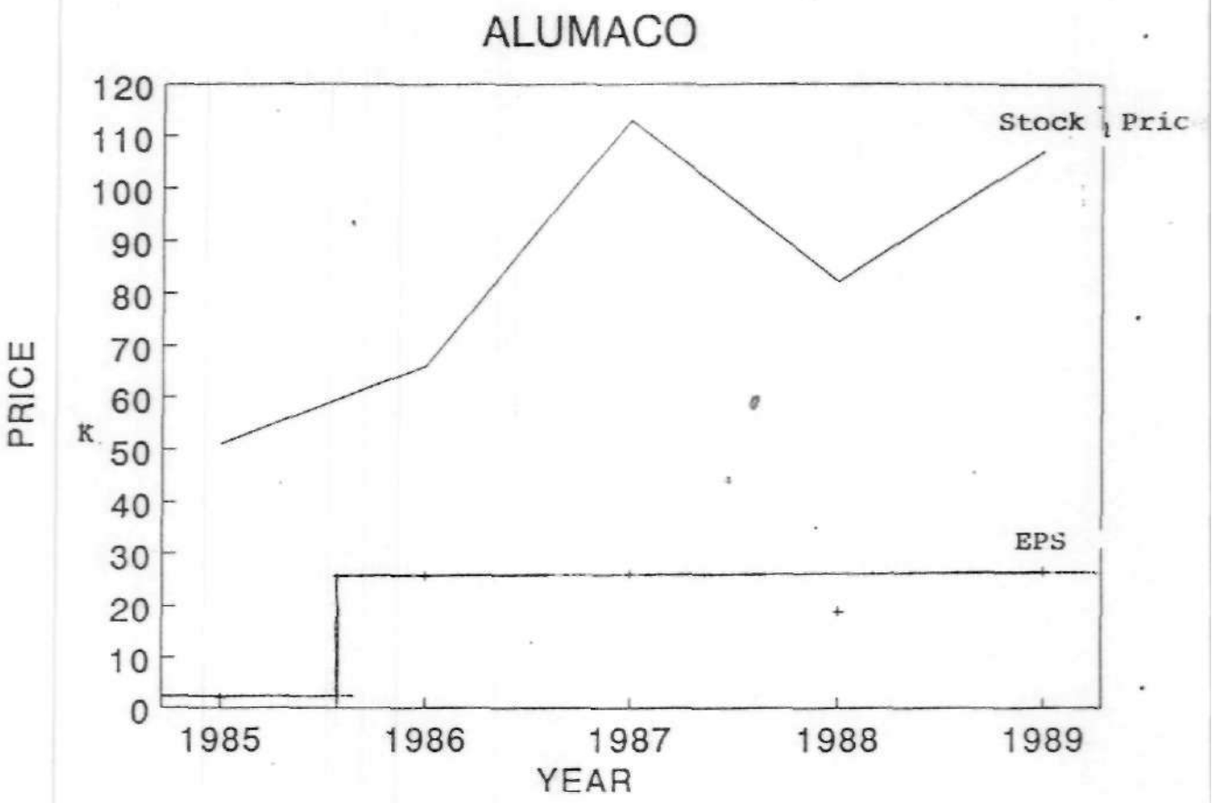

ALUMACO
PRICE
120
110
100
90
80
70
60
50
40
30
20
10
0
K
Stock Pric
EPS
1985
1986
1987
1988
1989
YEAR

FIGURE 17

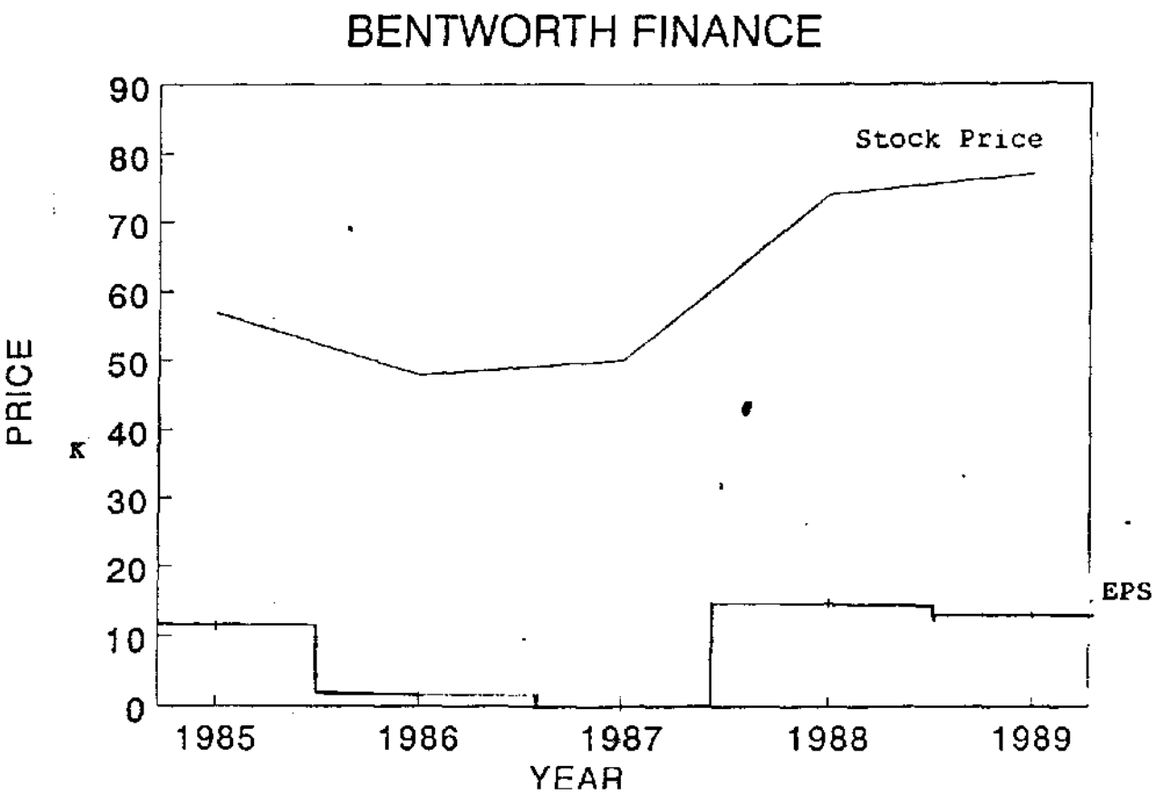

BENTWORTH FINANCE
PRICE
K
90
80
70
60
50
40
30
20
10
0
Stock Price
EPS
1985
1986
1987
1988
1989
YEAR

FIGURE 18

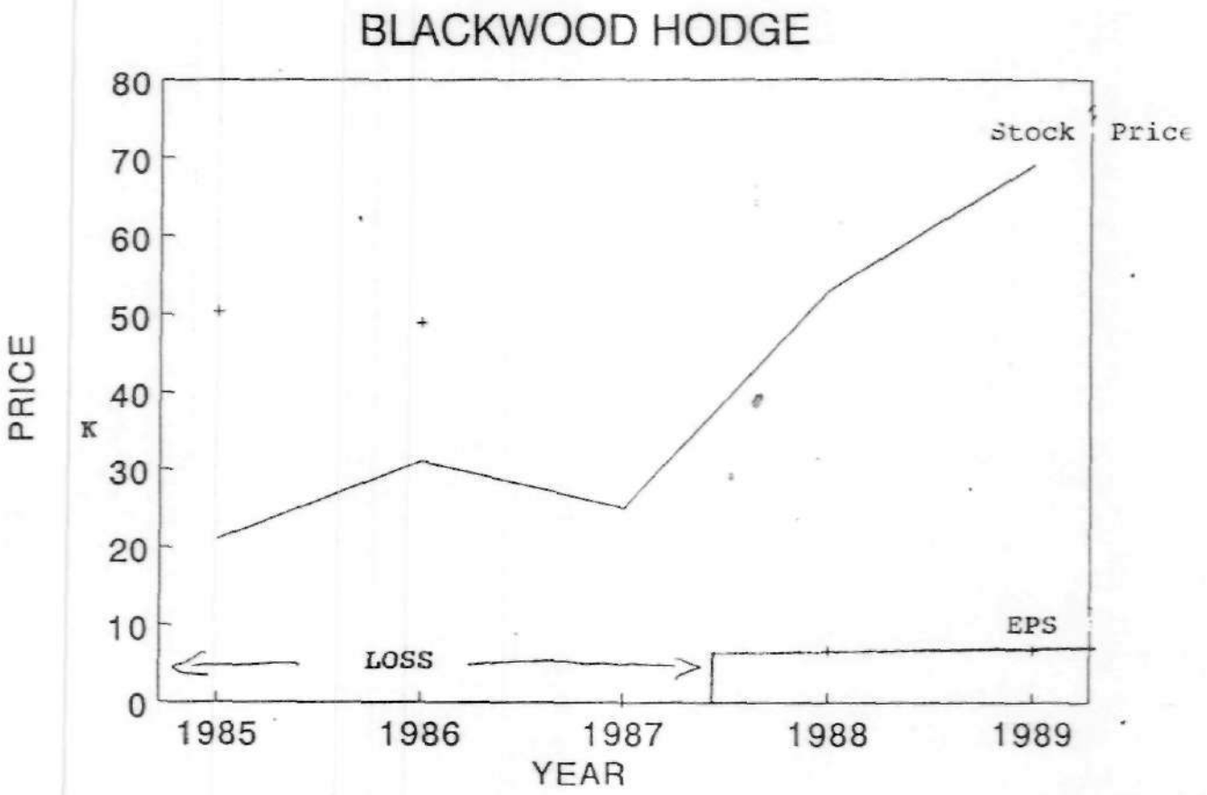

BLACKWOOD HODGE
PRICE
80
70
60
50
40
30
20
10
0
K
Stock Price
EPS
LOSS
1985
1986
1987
1988
1989
YEAR

FIGURE 19

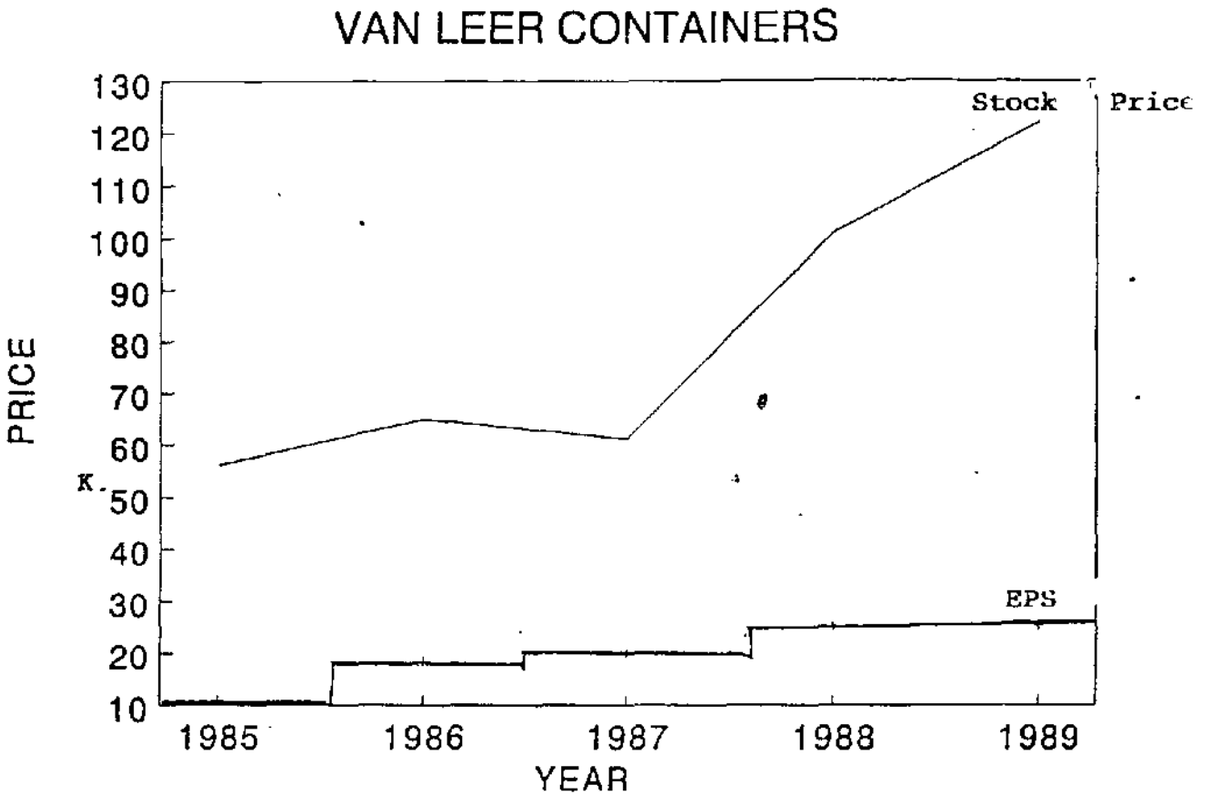

VAN LEER CONTAINERS
PRICE
130
120
110
100
90
80
70
60
50
40
30
20
10
K
Stock Price
EPS
1985
1986
1987
1988
1989
YEAR

FIGURE 20

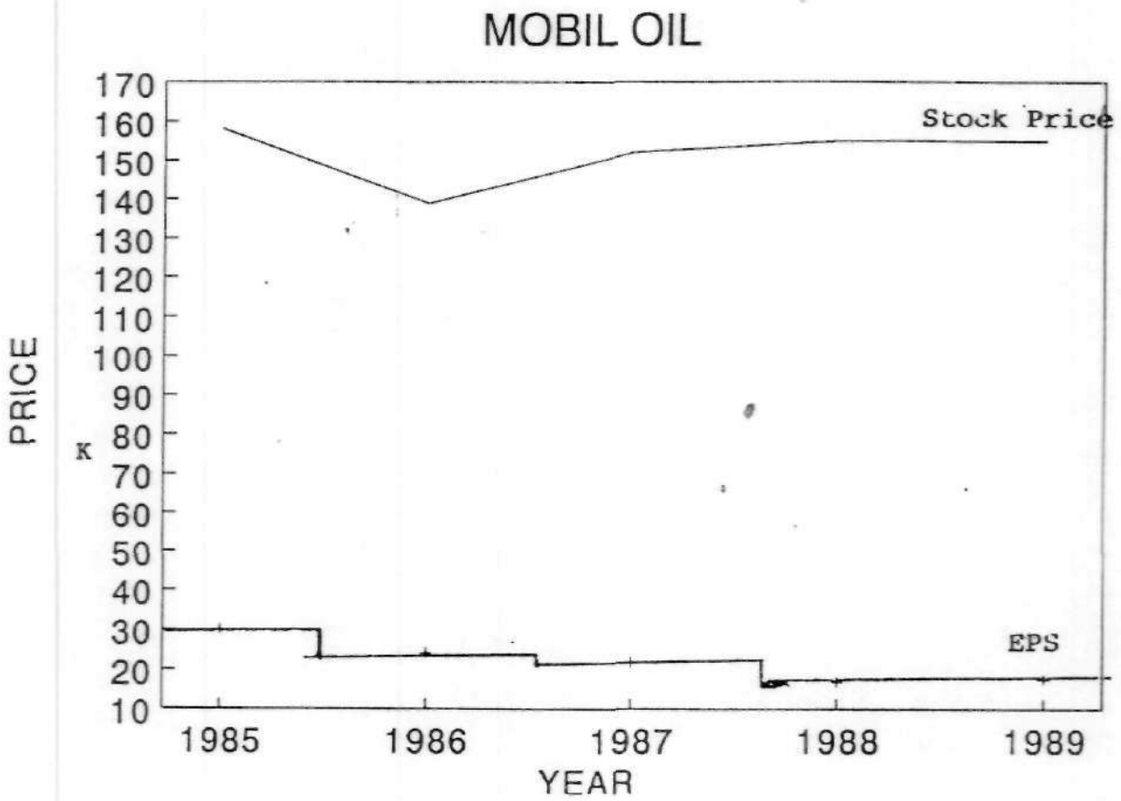

MOBIL OIL
PRICE
K
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
Stock Price
EPS
1985
1986
1987
1988
1989
YEAR

FIGURE 21

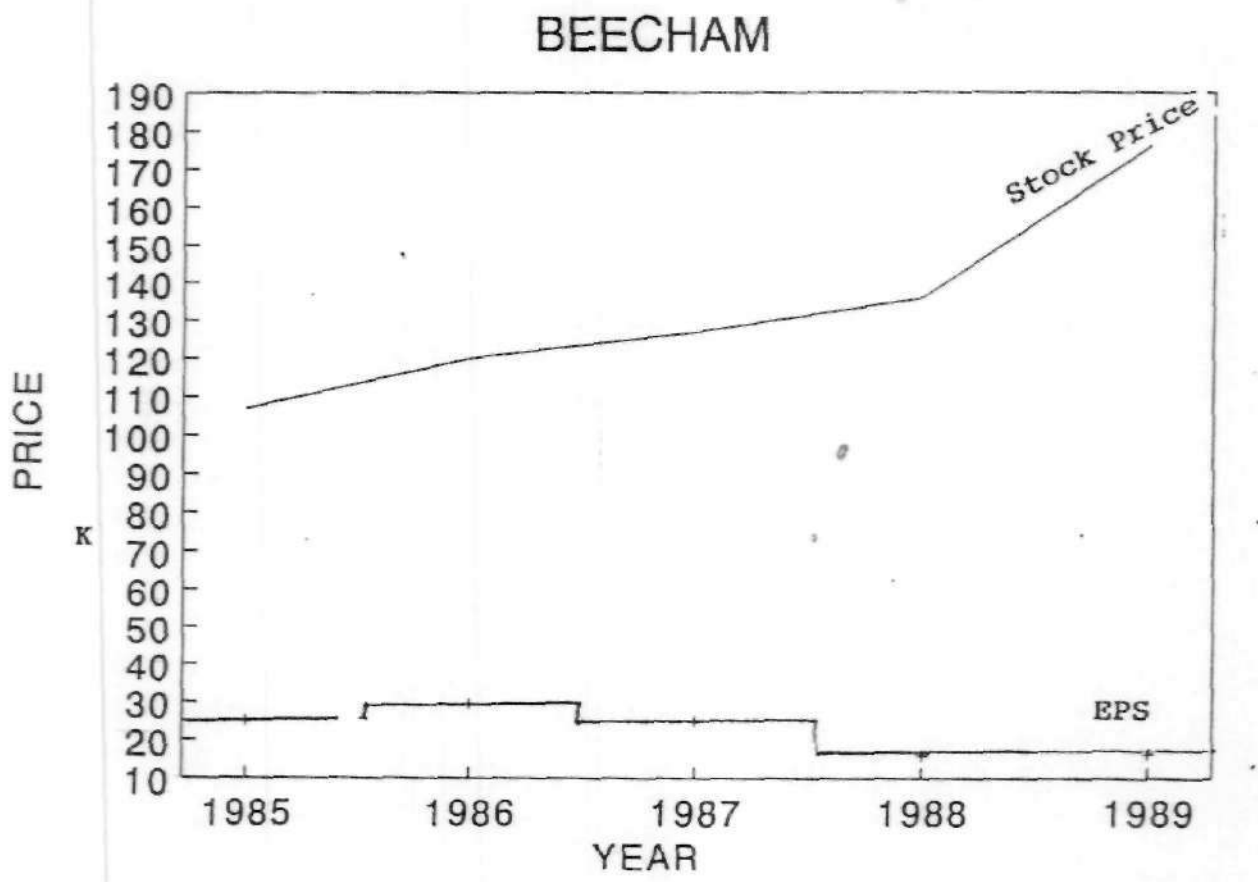

BEECHAM
PRICE
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
Stock Price
EPS
1985
1986
1987
1988
1989
YEAR

FIGURE 22

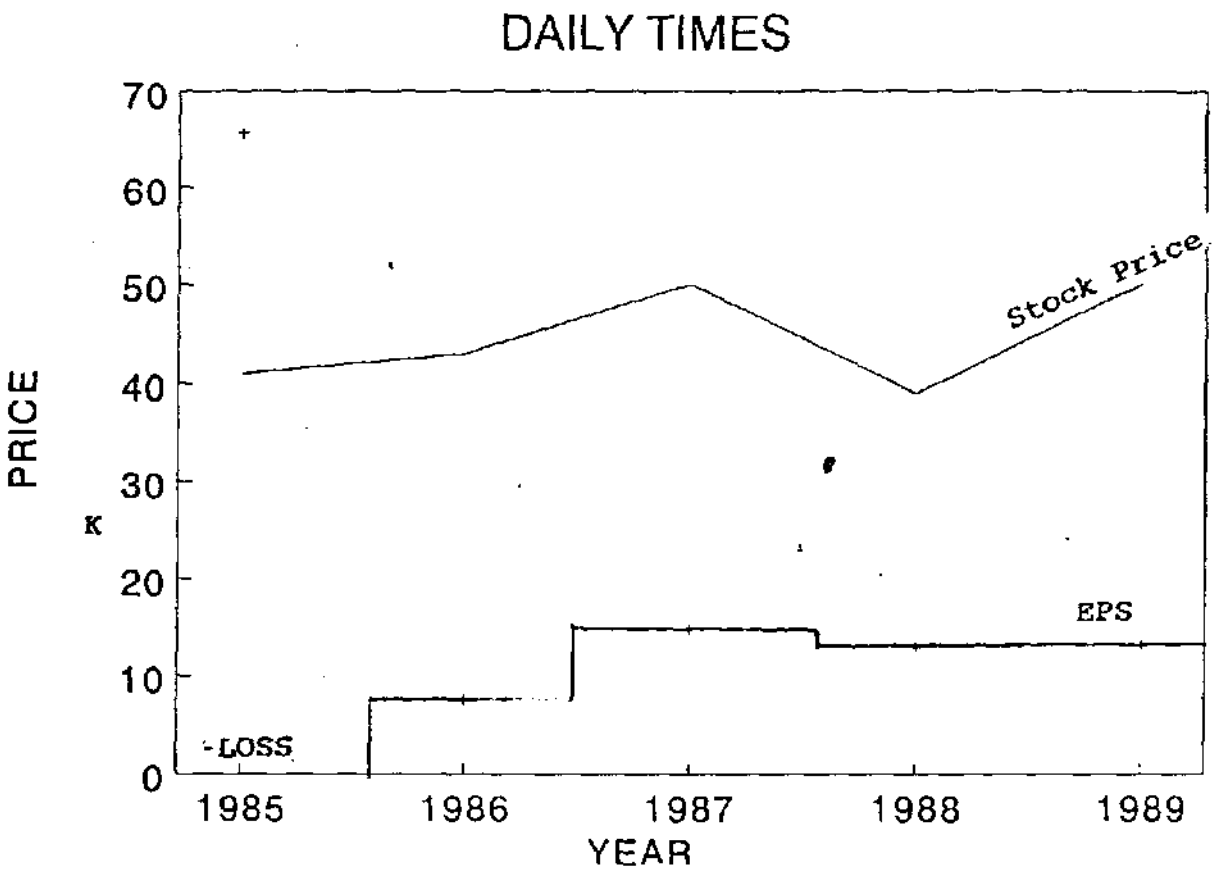

DAILY TIMES
PRICE
K
70
60
50
40
30
20
10
0
Stock Price
EPS
LOSS
1985
1986
1987
1988
1989
YEAR

FIGURE 23

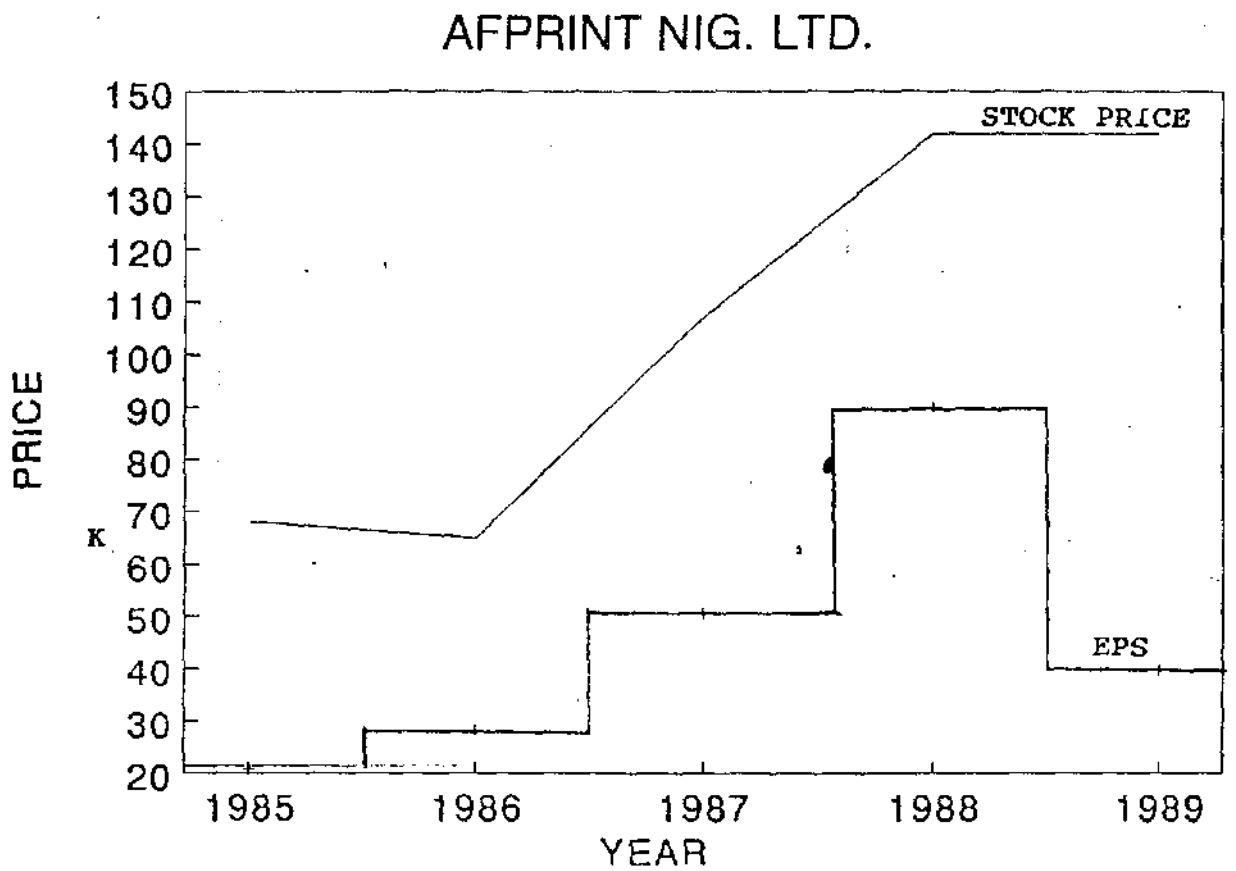

AFPRINT NIG. LTD.
PRICE
K
150
140
130
120
110
100
90
80
70
60
50
40
30
20
STOCK PRICE
EPS
1985
1986
1987
1988
1989
YEAR

FIGURE 24