THE RELATIONSHIP BETWEEN INVESTMENT RATIOS AND SHARE PERFORMANCE OF COMPANIES QUOTED ON THE NAIROBI STOCK EXCHANGE

BY

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DECLARATION

THIS PROJECT IS MY ORIGINAL WORK AND HAS NOT BEEN PRESENTED FOR A DEGREE IN ANY OTHER UNIVERSITY

Signed Asienwa Date 6/7/93

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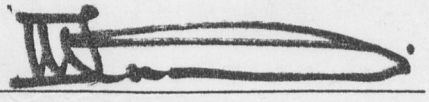
THIS PROJECT HAS BEEN SUBMITTED FOR EXAMINATION WITH MY APPROVAL AS UNIVERSITY SUPERVISOR

Signed  Date 6/7/93

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DEDICATION

TO MY PARENTS

CLYDE AND FELGONAH ONG'AYO ASIENWA

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CHAPTER ONE

INTRODUCTION

1.1. BACKGROUND TO THE STUDY

Investors are concerned about the effect of business results on the market value of their investment (Helfert, 1980:37). The investors are also interested in the profitability of the business. Profitability, here, means the returns achieved through the efforts of management, on the funds invested by the owners. Dividends are the share of profits paid to shareholders (Gunesekera, 1992:13). Investors are also interested in the disposition of earnings which belong to them, that is, how much is reinvested in the business or paid out to them as dividends. To the investor the value of shares depends on the successful continuance of the business. According to Lee (1983:407), the wealth of the equity shareholders is increased by management's success in maximizing the Earnings Per Share (EPS), in paying commensurate dividends, and in arousing and fulfilling market expectations of increasing earnings and dividends to come. Both

the potential and current investors are constantly evaluating the performance of companies, by analyzing the annual financial statements in order to determine whether to buy or sell shares that they hold.

According to Grady (1967:335),

> **"the only practical way in which an investor can today give expression to his conclusions in regard to the management of a corporation in which he is interested, is by retaining, increasing or disposing of his investment, and accounts are mainly valuable to him in so far as they afford guidance in determining which of these courses he shall pursue"** [quoted by Stone, 1967:335].

Miller (1974:18) observed that investors hold securities for the consumption opportunities they offer and will evaluate them in terms of their yields (quoted by Obonyo, 1989:19).

1.2. THE NAIROBI STOCK EXCHANGE

A Stock Exchange is a market which deals in the exchange of shares of public quoted companies and Government and Municipal gilt-edged stocks for money. The Nairobi stock exchange (NSE) was established in 1954. Presently it has 53 listed companies. These 53 companies offer a total of 47 ordinary shares, and 9 preference shares. The Nairobi Stock Exchange is made up of six stockbroking firms which are Dyer & Blair Limited, Shah Munge & Partners Limited, Francis Thuo & Partners Limited, Francis Drummond & Company Limited, Nyaga Stockbrokers Limited and Ngenye Kariuki & Company Limited, all based in Nairobi.

The introduction of the Capital Markets Authority and a trading floor at the NSE are expected to result in an increased awareness of the workings of the stock exchange and the benefits of investing in stocks.

As a capital market the Nairobi Stock Exchange has the function of

i) helping mobilize domestic savings thereby bringing about the reallocation of financial resources from dormant to active agents,
ii) facilitating the transfer of securities
iii) assisting companies to engage local participants in their equity thereby giving Kenyans a chance to own shares,

iv) helping companies to raise extra finance essential for expansion and development.

The Nairobi Stock Exchange deals in two types of securities: Variable income securities and fixed income securities. Variable income securities are the ordinary or the equity shares which have no fixed rate of dividend payable as the dividend is dependent upon both the profitability of the company and what the Board of Directors decide. The fixed income securities include preference shares, debenture stocks, municipal and government stocks. These securities have a fixed rate of interest/dividend which is not dependent upon profitability.

1.3. BREAKDOWN OF FINANCIAL INFORMATION INTO RATIOS

Accounting information deals with the measurement and communication of economic information [Mlynarzyk, 1969:67]. The communication process generally takes place when the information contained in the Accounting system is summarized and classified into forms of income statements, Balance Sheets and other supplementary statements. These statements, for publicly quoted companies are available at the Nairobi Stock Exchange, and for the unquoted companies are available at the registrar of companies. Investors break this information into ratios. From the Balance Sheet, and Income Statement, ratios can be extracted that to show the cash position, liquidity, working capital/cash flow, debt-service coverage, profitability, and turnover of a company. After accounting information has been broken down into these ratios, investors can make investment decisions based on how the ratios are changing or improving.

Investment ratios are important for the investor (both current and potential) who is interested in the market prices of the shares of a company on the Stock Exchange. The ratios make information 'digestible' to the investors that decisions can be made. The value of an investment in ordinary shares in a listed

company is its market value, and so investment ratios, must have regard not only to information in the company's published accounting, but also to the current price.

1.4. CRITICISMS OF RATIO ANALYSIS

It may prove difficult to make comparison of data between or among different firms using different methods of accounting measurement. Financial statement analysis, therefore, may have limited value except for trend analysis for the same firm consistently applying the same methods.

According to Montgomery (1982, p. 623), in any investment decision, qualitative information not measured and reported by accountants can be very significant in decision making. These include:-

(i) the quality of the firm's management and work-force, and the selection and training programs needed to ensure maintenance or improvement of this quality,

(ii) the quality of its labour relations and its prospects for continued operation at competitive labour force,

(iii) the quality of its products and of research directed towards new and improved products in a rapidly changing world,

(iv) the environment of the firm, including overall economic forecasts, industry forecasts, and the future share of the market that the firm might reasonably anticipate.

Therefore when making decisions using ratio analysis consideration has to be made of the above factors which are not reflected in the financial statements.

Robertson (1984, p.30-31), summarizes the limitations of financial ratios as:-

i) they have been developed on a piecemeal basis,

ii) no 'rule of thumb' applies to all companies. For many years, there are those dogged by the belief that there is some all-embracing rule of thumb that can be applied across all companies. This is not true since it supposes that the ratios have been developed scientifically and that all companies are the same.

iii) Robertson (ibid, p. 30), questions the significance of the Earnings Per Share. Increase in this ratio gives an impression that there has been a growth within the company. Sometimes the extra-ordinary items, borrowing policy, gearing, long-term interest expense, etc., are not taken into account.

Financial statements report on the results of a firm's management activities. All statement analysts can be viewed as evaluating management's performance. However, different individual statement analysts have different personal objectives and therefore, may focus upon one particular aspect of management or merely the final overall result (Montgomery, 1982, p. 602). There should be a standard way of interpreting the ratios, may be a standard is needed for this purpose.

1.5. INVESTMENT RATIOS

According to Wood (1989:489), investment ratios are important for the investor (both current and potential) and the financial manager who is interested in the market prices of the shares of a company. These ratios help equity shareholders and other investors to assess the value of an investment in ordinary shares of a company. The value of an investment in ordinary shares in a listed company is its market value, and so investment ratios must have regard not only to information in the company's published accounts, but also to the current price.

These ratios include:-

(a) Earnings Per Share (EPS)

According to Helfert (1989:39), EPS is a measure to which both management and shareholders pay a great deal of attention. It is widely used in the valuation of shares. The EPS calculations made over the years indicate whether or not the firm's earnings power has changed over that period (Pandey, 1990:140). Earnings Per Share may be calculated as : -

$$EPS = \frac{\text{Net Profit after tax - Preference Dividend}}{\text{Number of Ordinary Shares}}$$

EPS is a special ratio since it has been given 'official' recognition in an Accounting Standard, SSAP 3[1]. SSAP 3 paragraph 10 defines EPS as the profit in pence (cents) attributed to each equity share, based on the consolidated profit of the period after tax and after deducting minority interests (where applicable) and preference dividends, but before taking into account extraordinary items, such profit being divided by the number of ordinary shareholders [Lee 1983 28:1]. This

[1]Brockington, 1990, p. 229

computation is based on the nil basis. The alternative one is the net basis which has the tax charge including also those elements which arise because of the actual distribution [ibid. p. 281]. This ratio is quoted in the Annual reports, however some of the companies quoted on the Nairobi Stock Exchange do not quote it [as observed from the Annual Reports at the Nairobi Stock Exchange by the researcher]. Earnings Per Share shows the earnings the market expects in relation to the current share prices.

(b) Dividend Per Share (DPS)

Dividends are generally declared publicly on a per share basis by a company's board of directors, and in most cases no calculation is necessary. Sometimes it is taken as the dividend for the previous year, otherwise it is calculated as:-

$$DPS = \frac{\text{Dividend to common Shareholders}}{\text{Total number of common shares}}$$

(c) Dividend Cover (DC)

This ratio shows the number of times the dividend declared is covered by available profits. It is a measure of how secure a dividend is, i.e. how

likely it is to be maintained in the future. It can be computed as:-

$$DC = \frac{\text{Net Profit after tax - Preference Dividend}}{\text{Dividend on common shares}}$$

(d) Book Value (BV)

Another measure used by financial analysts is the book value of common stock. BV is the "net amount currently assigned or reported by accountants [Montgomery, 1982:421]. If there are preferred shares outstanding, their value is subtracted from the networth before dividend by the number of common shares. It can be computed as :-

$$BV = \frac{\text{Total stockholders equity - Preference claims}}{\text{Number of common shares outstanding}}$$

$$\text{OR, } BV = \frac{\text{Common Stock + Reserves}}{\text{Number of common shares}}$$

According to (Gup, 1983, p. 321), BV is not an important consideration in determining the market

price. However the BV is an important determinant of value in the following cases:-

a) influencing the value of financial business concerns than industrial concerns,

b) Life insurance companies - Life insurance policies in force are the basic earnings assets of life insurance companies,

c) BVs can also be used in determining the value of natural resource companies. The value of such companies depend on the value of the natural resources the have access to.

d) Book Values are important in the case of failing firms. In case of liquidation the shareholder is the residual claimant and the BV per share will give the shareholder a rough estimate of this value.

(e) The Price Earnings (PE) Ratio

The PE ratio is one of the most widely used method of determining the value of common stock by investors [Pandey, 1990: 142]. The PE ratio relates the EPS to the price the shares sell at the market. A high PE ratio indicates strong shareholders confidence in the company and its future. It indicates how the stock market is judging the company's earnings performance and prospects. The PE Ratio is usually computed as follows:

$$PE = \frac{\text{Market Price}}{\text{Earnings Per Share}}$$

This ratio shows how investors view the growth potential of particular stocks. A high PE ratio indicates prima-facie an expensive share but may be an expression of market confidence in the company's expansion potential or of its susceptibility to an attractive takeover offer[2]

(f) Earnings Yield [EY]

This ratio expresses the rate of return on an investment. Earnings Yield indicates what the dividend yield could be if:

i) the company paid out all its profits as dividends and retained nothing in the business,

ii) there were no extra-ordinary items in the profit and loss account.

Not all the earnings of an enterprise is paid out as dividends to the shareholders. The dividend yield evaluates the investors' return in relation to the market value of the share. If all eanings are paid out as dividends, then the earnings yield and the dividend yield are the same.

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[2]ibid, p.230.

Earnings Yield can be computed as:

$$EY = \frac{\text{Earnings Per Share}}{\text{Market Price Per Share}}$$

[g] Dividend Yield [DY]

Dividend Yield measures the rate of return on an investment in shares, as distinct from the declared dividend rate which is based on the nominal value of a share. This is a measure of the return on the owners' investment from cash dividends. The dividend yield is the return, dividendswise only, of a share, that is, it evaluates the investor's return in relation to the market value of the share. It can be computed as:

$$DY = \frac{\text{Dividend Per Share}}{\text{Market Price per share}} \times 100$$

Dividend yield gives the actual cash received by the investor as a rate of return on his investment.

1.6 STATEMENT OF THE PROBLEM

Quoted companies are required to file their financial statements with the Nairobi Stock Exchange. These statements are to be prepared according to Generally Accepted Accounting Principles. In Kenya

these statements are to conform to the Kenya Accounting Standards. They can then be used by investors to make investment decisions. These investors have a problem as to which securities to buy, sell or hold. It has been argued by Phillips et al (1970:178), that the decision to invest is based on the investors evaluation of accounting numbers and its relationship to existing share values. There is need, therefore to establish whether such a relationship exists. This study attempts to establish a relationship between investment ratio performance measures and the share value of companies quoted on the Nairobi Stock Exchange. No relationship between financial accounting data and share prices has been established so far for this exchange.

1.7. OBJECTIVE OF THE STUDY

The main objective of this study is to establish a relationship between investment ratios and the market share values of companies quoted on the NSE.

1.8. NEED OF THE STUDY

Investors are faced with a decision of which shares to invest in. Stock prices keep on changing to reflect all available information. Investment ratios are needed as a basis for prediction, particularly

that which relate to share prices. The relationship between the accounting numbers and share prices is, needed by investors who want to invest in companies quoted on the Nairobi Stock Exchange. A relationship between share prices and accounting ratios was found to exist significantly in studies carried out by Basu (1978], O'Connor (1973), Phillips et al (1970), Durand (1970), Staubus (1965). A study is therefore needed to find out if this relationship exists for the companies quoted on the Nairobi Stock Exchange.

1.9 IMPORTANCE OF THE STUDY

The study will be of importance to both current and potential investors who need to make decisions on whether to buy, sell or hold shares. The established relationship could then be used as a proxy of determining the share values of quoted companies.

The study will also be of importance to academicians who need the information for market based research.

1.10. OVERVIEW OF THE STUDY

Chapter one gives the background of the study. Chapter Two presents literature review on studies and research findings in accounting information and share prices. Chapter Three describes the research design.

Chapter Four details the data analysis and findings. Chapter Five ends with summary, conclusions, limitations and suggestions for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1. THE USEFULNESS OF ACCOUNTING INFORMATION IN INVESTMENT DECISIONS

Accounting provides information to assist various individuals, for instance, lenders and even owners in making economic decisions. Both shareholders and potential investors find financial statements of importance when making decisions. Investors demand accounting information so that they can make improved decisions. According to Foster (1986:9), there may be uncertainty over the future profitability of a firm, the quality of its management, etc. Accounting information is a useful input into assessing the 'past track record' of a company (ibid. p.10).

Investors find accounting information useful and reliable especially when the financial statements have been audited and they show a true and fair view. This information reduces the uncertainty in investment and credit decisions. Bissell (1973:73) add that buyers and sellers of securities today depend to a substantial degree on future expectation as a major aspect of the investment decision-making

process. The more broadly reliable information that is disseminated throughout the investment community, the greater will be the tendency of security prices to remain at or near "true investment value".

In his introductory note, Paul (1986:13) says that

> **"there seems to be a general agreement among all that the basic objective of financial statements published by companies is to provide information useful for making economic decisions primarily by the investors".**

A study by Ball and Brown (1968) on evaluation of accounting numbers showed that the information reflected in the financial statements is useful to investors. They concluded that if the market is assumed to be able to identify the real income (economic income) irrespective of the measurement problems in accounting, then the price changes of securities can be attributed to the information content of accounting reports.

O'Connor (1973:339) carried out a study on the usefulness of Financial Ratios to investors in common stock. He concluded that financial ratios are generally useful to external decision makers. He found out that investors use ratios and so ratios must be useful to them. According to Beaver et al

(1968:678) accounting data ought to be evaluated in terms of their purposes or uses. Knowledge of accounting information is useful in decision making. There is evidence that since the late 1800's that information from published annual reports has been used in the valuation of businesses [Horrigan, 1968:285].

Research done by Martin[3] shows that to many shareholders, the only financial information available is the annual report data. Faced with uncertainty, the decision maker in the equity market will seize readily available, pervasive information, to bring order into a complex decision environment. Martin's study suggests that the information supplied by the accounting system is utilized by investors in investment decision making.

Information found in the financial statements in only part of the total information needed by decision makers. Other information, internal and external is needed to have full information of the company. This is supported by Benston's study (1967:28) on Corporate Accounting data and stock prices which showed the information contained in published accounting reports is a relatively small portion of

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[3]Martin, "A Reply", Empirical Research in Accounting: Selected Studies, 1971, p.44.

Univariate analysis revealed that ratios used singly would not be useful in differentiating between common stocks yielding high rates of return.

Staubus (1965:119) carried out an empirical study of the correlation on common stock values and various financial accounting variables. The independent variables tested were earnings, dividends, current flows, and book values. Association was measured by the coefficient of determination (r^2). He concluded that dividends and book values were not as reliable individual indicators of common stock as were earnings and current flows.

Basu (1978:599) examined the degree to which earnings yields of corporate equities affect the association between annual income numbers and security prices. The conclusion was that earnings yields of corporate equities are indicators of future investment performance and, as such, affect the association under consideration. The results suggest that earnings yields have potential value to investors and other capital market participants, who are able to forecast accurately annual earnings outcomes. He adds that Earnings Yields are surrogates for risk parameters.

Phillips et al (1970:178), looked at the relationship between income measures and bank stock

values. They took the dependent variable as the value of the bank's stock. Using a multiple regression analysis, they found evidence of a strong association between bank stock values and operating earnings per dollar of assets.

David Durand (quoted by Phillips et al, 1970:179), used a multiplicative model to regress year-end bank stock process per share on operating earnings, dividends, and capital per share, between 1946 and 1953. Despite extensive testing, he was unable to find variables other than these three which appeared to be significantly related to stock prices.

Benston (1967, p.1), seeked to find out which published data are used by investors, as reflected by changes in the market price of common stocks. To provide a meaningful test, the relationship between common stock prices, published accounting information and other factors were specified. He found that only a relatively small, though significant, relationship was found between the rates of change of data found in corporate published reports and rates of change of stock prices. To him, the information contained in published accounting reports is a relatively small portion of the information used by investors.

Drzycimski [qouted by Phiilips et al, 1970:180] replicated Durand and concluded that the influence of

book value and dividends had declined and that the influence of operating earnings had increased. Easton[4], sought to find out a valuation link between the future benefits and security prices. He asserted that if accounting earnings can be used by investors as parsimonius and efficient predictors of future dividends, then there will be a valuation relationship between accounting earnings and security prices. He concluded that share price is the present value of future stream of cash receipts from equity investment.

Martin[5] tested the decision-relevance of accounting information reported to holders of common stock equities through published financial statements (annual reports). He concluded that accounting information reported to holders or prospective holders of market equities (common stock shareholders) through published financial statements constitute decision - relevant data for equity decisions.

From the studies a conclusion can be made that both current and potential investors in common stock use financial annual reports to make decisions and that ratios can be used to establish a relationship

[4]Easton, 1985, p.54

[5]Martin, 1971, p.1

between share prices and accounting information as disclosed in the published financial statements.

The ratios used in this study are: Earnings Per Share, Dividend Per Share, Dividend Cover, Book Value, Price-Earnings, Earnings Yield and Dividend Yield. Each of these ratios is related to share price. All these ratios are expected to be directly related to the Share Price. Earnings Per Share is found by dividing net profit after tax, less preference dividend by the number of ordinary shares. The Share Price is expected to increase as Earnings Per Share increases. Increase in Dividend Per Share portrays a positive image to investors and so increase in this ratio means that the Share Price increases. Book Value of a stock share is determined by dividing the number of shares of common stock outstanding into the firm's networth (Gup, 1983:321). Book Value, according to Gup (ibid.) is not an important consideration in determining the market price except in some cases like mutual funds, life insurance companies, and natural resource companies. Hammel et al (1967:97) carried out a study on factors influencing Price-Earning ratio. The relationship emerged even more strongly when the analysis was limited to related companies. This shows that Price-Earning ratio is related to the Share Price. Dividend Cover is found by dividing Earnings Per Share by

Dividend Per Share. The Share Price is expected to increase as this ratio increases. Dividend Yield measure the rate of return on an investment in shares. This ratio is the return dividendwise only, of a share, i.e. it evaluates the investor's return in relation to the market value of the share.

CHAPTER THREE

RESEARCH DESIGN

3.1. THE POPULATION

The population was comprised of all companies quoted on the Nairobi Stock Exchange. The selection of the NSE was because the required data for the companies quoted is readily available. The companies selected were

i) Companies that have been continuously quoted for 15 years up to December 31st, 1990 (1976-1990). This was considered a period long enough to do a regression analysis.

O'Connor used 17 years (1950-1966), Phillips et al, 9 years, Mlynarcyk, 13 years (1957-1961).

ii) Companies that have equity shares. Only 12 companies had information for fifteen years. This number (12) was considered too small a sample and so the researcher took a another sample of 16 companies with information for 10 years from 1982- 1991. Those that had been continuously quoted for 15 years formed Group B, and the second group with twelve companies formed Group A (see Appendix 2).

3.2. DATA COLLECTION

Secondary data from published financial statements of companies quoted on the Nairobi Stock Exchange was collected using data collection form (Appendix 1). This data was used to compute the investment ratios. The independent variables of this study were investment ratios that were computed using data available in published annual financial statements for companies quoted on the Nairobi Stock Exchange. The share price (the last transacted price of the year), was used as the dependent variable. Tables were utilized to record the computed ratios.

3.3.0. DATA ANALYSIS

The data collected was analyzed using multiple linear regression[6] and correlation analysis. Phillips et al (1970:178), used multiple regression to find out the relationship between income measures and bank stock values. Staubus (1965:125) used regression to find the association of financial accounting variables with common stock values. In 1973 O'Connor used a step-wise multiple regression analysis in his attempt to find

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[6]Philips et al used simple regression analysis, which revealed that ratios used singly would not be useful in differentiating between common stocks yielding high rates of return.

out the usefulness of financial ratios to investors in common stocks.

The multiple regression relationship was in the form:-

$$Y = b_0 + b_1EPS + b_2DPS + b_3DC + b_4BV + b_5PE + b_6EY + b_7Dy + \epsilon$$ [O'Connor, 1973:347]

Where,

Y = Market share price of companies quoted on the NSE,

b_0 is the intercept parameter (constant term),

b_i, where i= 1,...,7 are the coefficients of the independent variables, each of them indicates the effect on share price of a unit of change in the independent variable.

EPS = Earnings Per Share Ratio

DPS = Dividend Per Share "

DC = Dividend Cover "

BV = Book Value "

PE = Price Earnings "

EY = Earnings Yield "

DY = Dividend Yield "

E = Error term or noise, which represents a failure to include all factors in the model.

The regression analysis is performed under the assumptions specified in Appendix 5. R^2, was used to test the explanatory power of the regression

analysis, t-Values were used to test the significance of the predictor variables.

A coefficient of the predictor variable was considered significant if it had a value of greater or equal to 2.58 i.e. at 95% significant level. A correlation matrix was used to test for multicolinnearity [see Appendix 3A2 and 3B2].

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

A multiple regression analysis, using stagraphics package, was done to analyze the data. Detailed results are presented in Appendix 3A, 3B, 4, and 6. The tables below show the summarized results.

TABLE 1A

This table presents the t-Values for Group A Companies. The t-value is considered significant where calculated t is greater than 2.58 (95% significance level).

Co.	EPS	DPS	DC	BV	PE	EY	DY
A1	-2	2.9*	3.3*	0.01	0.5	1.6	-3.2*
A2	2.4	3.2*	-2.2	-.02	-.1	-2.7	-11*
A3	-1.2	6.9*	.98	-.1	-1.2	.4	-4.7*
A4	.1	2	-.32	.33	.46	.29	.16
A5	-1.8	3.3*	.9	1.4	-.9	1.6	-4*
A6	3.2*	1.8	1.1	-1.3	.5	-3.6*	.7
A7	-1.3	3.3*	1.3	-.1	-.6	.6	-3.7*
A8	3.1*	4.1*	2.3	-.4	3.6*	-.6	-1.5
A9	-1.2	4.1*	.11	-.22	1.5	1.15	-4.1*
A10	-1.5	3.2*	2.1	.05	2.6*	-.6	-.5
A11	.1	2.4	.64	.14	.87	.72	-.16
A12	1.2	10*	-.9	3.7*	2.1	-1.4	-7*

The following table summarizes the percentage of t-values greater that 2.58 (i.e. at 95% significant level. The significant coefficients mean that the variable has an effect on the share price. The coefficients less that 2.58, on the other hand mean that the variable has no effect on the share price. The negative t-values mean that the variable has a negative effect on the share price. It can be observed that the negative t-value in TABLE 1c and TABLE 1d below are common for the dividend yield. This shows that as the share price increases, the dividend yield decreases, and vice vasa.

TABLE 1B

RATIO	**Percentage of Companies with t-values greater than 2.58**
EPS	17%
DPS	75%
DC	8%
BV	8%
PE	17%
EY	8%
DY	50%

From this summary Dividend Per share and Dividend yield are most significant as most companies have their t-values greater than 2.58 The results could be different if the number of companies was more, and a lower significance level used.

TABLE 1C
This table presents t-Values for Group B Companies. The t-value is considered to be significant if the calculated t-value is greater than 2.58 i.e. at 95% significance level.

	EPS	DPS	DC	BV	PE	EY	DY
B1	14.4*	-.55	-.69	-.13	5.6*	-4.5*	-.2
B2	-.12	-.4	.7	.83	.9	-.5	-.4
B3	2.7*	1	.7	-.5	-.5	-.9	-.23
B4	-.8	4.9*	-.5	-.5	-5.1*	-.71	-5.1*
B5	1.1	-.7	-.6	.14	.8	.42	1.3
B6	9.3*	.93	8.8*	-2	-2.9*	-9.7*	2.6*
B7	.12	.36	.85	-.97	.56	.8	.26
B8	2.7*	2.5	.95	-1.8	.3	-.9	-2.1
B9	1.4	-5.5*	-5.4*	4.4*	-4.3*	.01	-6*
B10	1.3	16.7*	-.8	-3.*	1.07	.24	-1.8
B11	-3.6*	7.3*	.1	-1.7	-1.9	2.3	-4.9*
B12	2.9*	.85	1.1	1.9	3.8*	1.3	-2.2
B13	.5	.2	-1.4	.7	2.6*	.4	.13
B14	-1.5	5.2*	-5.1*	4.5*	-4.3*	-2.01	-6.6*
B15	3.6*	-.9	-.2	.1	.04	-2	.85
B16	6.1*	-.5	-.7	1.02	1.5	.3	-.8

From the above table it is not easy to tell which particular variable has more significant results. The following table summarizes the ratio and percentage of companies with t-value greater than 2.58.

TABLE 1D

RATIO	Percentage of Companies with significant t-values [greater than 2.58]
EPS	50%
DPS	31%
DC	19%
BV	19%
PE	39%
EY	13%
DY	31%

From the table the Earnings Per Share for 50% of the companies is significant, followed by Price-Earnings and Dividend per share.

TABLE 2: This table presents the results of the calculated R^2. Ninety five percent level of significance was used because most studies, for instance Philips et al [1970: 188], Mlynaczyk [1969:73], and O'Connor [1973:349], used this level.

COMPANY	R^2(%)	COMPANY	R^2(%)
A1	78	B1	99.5
A2	98	B2	93
A3	85	B3	99
A4	57	B4	90
A5	86	B5	99
A6	97	B6	99.9
A7	82	B7	71
A8	97	B8	98.6
A9	84	B9	98
A10	97	B10	99
A11	52	B11	82
A12	98	B12	97
		B13	81
		B14	99
		B15	95
		B16	95

From the above table it can be observed that most companies has a large percentage of r^2. For group A only 2 companies, A4 and A 11 had r-squared of 52% and 57%. The rest had over 60%. For Group B companies, all companies have r-squared of over

70%. This shows that for each company, quite a large percentage of changes in share price is explained by the investment ratios. There is a high relationship between investment ratios and Share Price.

CHAPTER FIVE

SUMMARY AND CONCLUSION

5.1. SUMMARY

The study used multiple regression analysis to find out whether there is a relationship between share price and investment ratios for companies quoted on the stock exchange.

From the results, Earnings Per Share, Dividend Per Share, Price-Earnings, and Dividend Yield have a significant effect on share price, as seen from the significant t-values [Table 1B and 1D].

R^2 was 84.61% and 88.65% [see Appendix 3A1 and 3B1] which shows that the investment ratios explain a large percentage of the variation in share price. The conclusion here is that a significant association between Share Prices and investment ratios exists.

5.2. IMPLICATIONS OF THE RESULTS

The relationship between share price and accounting information is held to exist by many researchers, particularly in the developed world. Finding such a relationship in a developing country lends credence that application of accounting is not restricted by the developed/developing

dichotomy, i.e. Accounting information is useful in all environments.

5.3. LIMITATION OF THE STUDY

The time period for the data points was short, i.e. fifteen and ten years. This resulted in data which restricted the findings. The study was intended to use 53 companies quoted on the stock exchange for fifteen years. From the data collected only 12 companies met the criteria and this forced the grouping of the companies into two, twelve for fifteen years and sixteen for ten years. This brought a total of twenty eight companies which is only 53% of the total companies quoted on the stock exchange.

Another limitation is that historical data was used and no adjustment was made for inflationary influences.

5.4. SUGGESTIONS FOR FURTHER RESEARCH

The first suggestion is that a similar study can be undertaken for more companies and for a longer period [given more study time].

The study used historical data. A similar study could be carried out, but with inflation adjusted information.

APPENDIX 1: DATA COLLECTION FORM

COMPANY _____

YEAR /RATIO	SHARE PRICE	EPS	DPS	DC	BV	PE	EY	DY
1976								
1977								
1978								
1979								
1980								
1981								
1982								
1983								
1984								
1985								
1986								
1987								
1988								
1989								
1990								

APPENDIX 2

SAMPLE OF COMPANIES QUOTED ON THE NAIROBI STOCK EXCHANGE

A1 BAMBURI

A2 C.M.C

A3 EAST AFRICA PORTLAND CEMENT

A4 ELLIOTS

A5 GEORGE WILLIAMS

A6 I.C.D.C.

A7 MARSHALLS

A8 NATION

A9 PAN AFRICA INSURANCE

A10 KENYA BREWERIES LTD.

A11 KENYA OIL

A12 KENYA POWER AND LIGHTING CO. LTD.

B1 B.A.T.

B2 BROOKE BOND

B3 CARBACID

B4 CITY TRUST

B5 CREDIT FINANCE

B6 DIAMOND TRUST

B7 EAST AFRICAN CABLES

B8 EAST AFRICAN OXYGEN

B9 EAST AFRICAN PACKAGING

B10 EXPRESS KENYA LTD.

B11 KENYA NATIONAL MILLS

B12 KENYA ORCHARDS

B13 LIMURU

B14 MOTOR MART

B15 NATIONAL INDUSTRIAL CREDIT

B16 SASINI

APPENDIX 3B1

MODEL FITTING RESULTS FOR SP.

VARIABLE	COEFF.	STD. ERROR	T-VALUE	PROB (>~T~)
Constant	18.66	38.00	.49	.64
VAR2	4.45	3.18	1.40	.19
VAR3	-2.28	2.45	-.93	.37
VAR4	2.26	3.02	.75	.47
VAR5	-.28	.36	-.79	.44
VAR6	-.43	.66	-.65	.53
VAR7	.67	.72	.94	.37
VAR8	-2.02	.91	-2.23	.05
R-SQUARED	.89			
STD.ERR. OF EST.	6.91			

FURTHER ANOVA FOR VARIABLES IN THE ORDER FITTED

SOURCE	SUM OF SQUARES	DF	MEAN SQ.	F-RATIO	PROB (>F)
VAR2	276.265	1	276.26	5.76	.14
VAR3	69.36	1	69.36	1.45	.35
VAR4	.94	1	.94	.02	.90
VAR5	84.31	1	84.31	1.76	.32
VAR6	64.29	1	64.29	1.34	.37
VAR7	14.66	1	14.66	.31	.64
VAR8	237.36	1	237.36	4.96	.16
MODEL	747.18	7			

APPENDIX 3B2

CORRELATION MATRIX

	VAR1	VAR2	VAR3	VAR4	VAR5
VAR1	1.000	.573	.126	-.159	.088
VAR2	.573	1.000	.616	-.294	.111
VAR3	.126	.616	1.000	-.294	.096
VAR4	-.159	-.294	-.294	1.000	.841
VAR5	-.088	.111	.096	.841	1.000
VAR6	-.404	-.639	-.602	.062	-.313
VAR7	.062	.016	.333	-.148	.033
VAR8	-.445	.052	.257	.031	.252

APPENDIX 3A1

MODEL FITTING RESULTS FOR SP(VAR1).

VARIABLE	COEFF.	STD. ERROR	T-VALUE	PROB (>~T~)
Constant	9.42	1.99	4.73	.0003
VAR2	.11	.58	.20	.847
VAR3	6.95	1.65	4.21	.0009
VAR4	.28	.17	1.59	.113
VAR5	-.06	.02	-2.67	.0183
VAR6	.01	.09	.12	.9089
VAR7	-.002	.01	-.12	.9039
VAR8	-.63	.03	-4.79	.0003
R-SQUARED	.8461			
F-RATIO	5.499			

APPENDIX 3A2

CORRELATION MATRIX FOR COEFFICIENT ESTIMATES

	Constant	EPS	DPS	DC
Constant	1.000	-.8431	.2033	-.6891
EPS	-.8431	1.000	-.2988	.5946
DPS	.2033	-.2988	1.000	-.3793
DC	-.6891	.5946	-.3793	1.000
BV	-.2317	.0726	-.4422	.0182
PE	-.7275	.7901	-.2672	.4831
EY	.7377	-.9042	.2959	-.5883
DY	-.3618	.2773	-.9469	.4217

APPENDIX 5

ASSUMPTIONS OF REGRESSION ANALYSIS

According to Hamburg, 1983, p. 430-439 are as follows:

1. The correct form of the regression equation has been selected. All variables are linearly related to the response variable.
2. The observed data are typical in the sense that they represent a cross section of the population about which the investigator wishes to generalize.
3. The observed values of the response variables are statistically uncorrelated, i.e. there is no multicolinearity.
4. For all i = 1,2,.....7, the random error is normally distributed with mean zero and its variance constant (homoskedasticity).
5. The points of observation or the values of the predictor variables are fixed or selected in advance without error (autocorrelation).

APPENDIX 6

MODEL FITTING RESULTS FOR: SP

COMPANY A1

Independent variable	Coefficient	std. error	t-value	sig. level
Constant	3.686	1.804	2.043	.08
EPS	-8.974	4.582	1.958	.09
DPS	39.468	13.597	2.92	.02
DC	2.488	.755	3.29	.01
BV	.001	.083	.017	.98
PE	.035	.076	.457	.662
EY	.318	.194	1.633	.146
DY	-2.124	.659	-3.22	.015
R-Squared	.7778			
Durbwat	2.542			

COMPANY A2

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	12.49	2.259	5.528	.001
EPS	.615	.254	2.422	.046
DPS	10.791	3.397	-2.21	.015
DC	-.182	.082	.025	.063
BV	-.0004	.016	-.092	.98
PE	-.004	.041	-2.74	.929
EY	-.068	.025	2.74	.029
DY	-1.15	.108	10.6	.000
R-Squared	.9818			
Durbwat	2.002			

COMPANY A3

Independent Variable	Coefficient	Std. error	t-value	sig. level
Constant	3.677	1.14	3.23	.01
EPS	-0.59	.49	-1.12	.26
DPS	11.37	1.65	6.87	.00
DC	.227	.23	.97	.36
BV	-.006	.07	-.09	.93
PE	-.025	.02	-1.22	.26
EY	.008	.02	.44	.67
DY	-.337	.07	-4.69	.002
R-Squared	.856			
Durbwat	2.43			

COMPANY A4

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	3.67	2.08	1.76	.12
EPS	.02	.24	.11	.91
DPS	3.63	2.04	1.77	.11
DC	-.54	1.68	-.32	.75
BV	.02	.06	.33	.74
PE	.02	.05	.46	.66
EY	.04	.15	.29	.78
DY	.03	.17	.16	.88
R-Squared	.5689			
Durbwat	2.79			

COMPANY A5

Independent Variable	Coefficient	Std. error	t-value	sig. level
Constant	5.67	3.49	1.62	.14
EPS	-2.35	1.31	-1.78	.12
DPS	12.15	3.71	3.27	.01
DC	1.61	1.72	.94	.38
BV	.03	.02	1.41	.19
PE	-.03	.03	-.094	.38
EY	.11	.07	1.58	.16
DY	-.82	.21	-4.03	.004
R-Squared	.8592			
DurbWat	1.47			

COMPANY A6

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	4.57	6.94	.66	.53
EPS	3.44	1.07	3.19	.02
DPS	4.96	2.67	1.85	.1
DC	1.56	1.41	1.1	.11
BV	-.2	.15	-1.32	.31
PE	.26	.15	.53	.22
EY	-.49	.48	3.63	.61
DY	.07	.13	-3.6	.01
		.2	.37	.72
R-Squared	.97			
DurbWat	2.213			

COMPANY A7

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	7.76	1.19	.49	.00
EPS	-2.82	2.19	-1.3	.23
DPS	12.9	3.89	3.32	.01
DC	3.09	2.28	1.35	.22
BV	-.002	.024	-.1	.94
PE	-.01	.18	-.6	.59
EY	.07	.12	.57	.58
DY	-1.02	.27	-3.7	.01
R-Squared	.8198			
DurbWat	2.53			

COMPANY A8

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	-2.68	2.54	-1.06	.33
EPS	1.49	.48	3.09	.02
DPS	4.56	1.11	4.11	.004
DC	.65	.28	2.33	.05
BV	-.01	.02	-.45	.97
PE	.86	.23	3.64	.01
EY	-.01	.01	-.59	.57
DY	-.13	.08	-1.52	.17
R-Squared	.9651			
DurbWat	2.571			

COMPANY A9

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	6.99	4.95	1.14	.2
EPS	-1.74	1.48	-1.18	.27
DPS	16.3	3.94	4.14	.004
DC	.07	.58	.12	.91
BV	-.01	.02	-.22	.83
PE	.83	.56	1.47	.18
EY	.22	.19	1.15	.28
DY	-1.68	.41	-4.08	.004
R-Squared	.8401			
DurbWat	2.562			

COMPANY A10

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	-21.64	14.69	-1.47	.18
EPS	-3.43	2.3	-1.49	.18
DPS	15.23	4.75	3.21	.02
DC	14.73	7	2.1	.07
BV	.004	.07	.05	.96
PE	1.32	.51	2.59	.04
EY	-.34	.61	-.51	.59
DY	-42	.79	-.53	.61
R-Squared	.9703			
DurbWat	2.206			

COMPANY A11

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	2.84	1.61	1.77	.12
EPS	.01	.08	.08	.93
DPS	10.2	4.3	2.38	.04
DC	.24	.37	.64	.54
BV	.02	.13	.14	.88
PE	.06	.07	.88	.41
EY	.001	.001	.73	.49
DY	-.42	.26	-1.64	.14
R-Squared	.5206			
DurbWat	1.748			

COMPANY A12

Independent Variable	coefficient	std. error	t-value	sig. level
Constant	13.61	3.2	4.24	.004
EPS	.5	.42	1.19	.27
DPS	11	1.1	9.98	.000
DC	-1.1	1.13	-.92	.38
BV	.05	.01	3.7	.01
PE	.04	.02	2.07	.08
EY	-.03	.02	-1.39	.207
DY	-1.79	.24	-7.31	.000
R-Squared	.9787			
DurbWat	2.897			

COMPANY B1

Independent Variable	Coeffient	std. error	t-value	sig. level
Constant	-5.35	9.91	-.54	.64
EPS	9.48	.66	14.4	.005
DPS	-.47	.64	.75	.54
DC	-1.32	1.09	-.69	.667
BV	.025	.195	.13	.91
PE	2.67	.48	6.6	.03
EY	-1.38	.31	-4.44	.05
DY	-.38	1.1	-.34	.76
R-Squared	.9941			
DurbWat	2.047			

COMPANY B2

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	-73.9	83.57	-.88	.47
EPS	.89	1.27	.12	.91
DPS	4.02	10.1	.4	.73
DC	5.63	7.63	.73	.54
BV	.96	1.15	.83	.49
PE	5.59	6.28	.89	.47
EY	1.47	2.71	.54	.64
DY	-1.38	3.29	-.41	.71
R-Squared	.9388			
DurbWat	2.272			

COMPANY B3

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	51.08	65.54	.78	.51
EPS	4.63	1.69	2.73	.11
DPS	11.06	11.15	.99	.42
DC	2.52	3.72	.68	.57
BV	-.052	.09	-.54	.64
PE	-4.95	9.19	-5.4	.64
EY	-1.67	1.95	-.85	.48
DY	-1.63	.69	-2.24	.14
R-Squared	.8818			
DurbWat	1.39			

COMPANY B4

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	5.02	4.95	1.01	.42
EPS	-1.08	1.26	-.86	.48
DPS	35.03	7.13	4.91	.04
DC	-.16	.31	-.51	.66
BV	-.15	.3	-.51	.66
PE	-.06	.32	-.51	.66
EY	.06	.08	.71	.55
DY	-1.36	.27	-5.1	.03
R-Squared	.8943			
DurbWat	1.858			

COMPANY B5

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	-48.4	68.5	-.71	.55
EPS	20.1	17.34	1.15	.37
DPS	-33.1	44.9	-.74	.54
DC	-11.7	19.24	-.61	.6
BV	.01	.09	.15	.89
PE	7.05	8.72	.81	.5
EY	1.45	3.41	.42	.71
DY	1.28	.98	1.3	.32
R-Squared	.989			
DurbWat	2.86			

COMPANY B6

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	9.64	2.37	4.07	.06
EPS	9.31	.1	9.32	.01
DPS	1.38	1.49	.93	.45
DC	.05	.01	8.88	.01
BV	-.09	.04	-2.04	.18
PE	-.04	.14	-.29	.79
EY	-1.75	.18	-9.72	.01
DY	1.27	.48	2.62	.11
R-Squared	.9993			
DurbWat	2.331			

COMPANY B7

Independent Variable	Coefficient	Std. error	t-value	sig. level
Constant	11.65	7.96	1.46	.28
EPS	.46	3.84	.12	.91
DPS	4.27	11.57	.37	.75
DC	3.34	3.9	.86	.48
BV	-.49	.5	-.98	.43
PE	.02	.04	.58	.63
EY	-.34	.42	-.82	.5
DY	.36	1.39	.26	.82
R-Squared	.71			
DurbWat	2.433			

COMPANY B8

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	10.92	15.69	.69	.56
EPS	3.17	1.18	2.68	.12
DPS	7.83	3.19	2.46	.13
DC	.4	.42	.95	.44
BV	-.15	.08	-1.8	.21
PE	.54	1.76	.31	.79
EY	-.16	.16	-.97	.43
DY	-1.35	.65	-2.05	.18
R-Squared	.9859			
DurbWat	2.663			

COMPANY B9

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	42.9	5.6	7.66	.02
EPS	1.62	1.19	1.36	.31
DPS	9.11	1.65	5.52	.03
DC	-7.22	1.3	-5.54	.03
BV	-.54	.12	-4.39	.04
PE	-1.16	.27	-4.31	.05
EY	.03	.25	.1	.93
DY	-1.86	.31	-6.04	.03
R-Squared	.9969			
DurbWat	2.627			

COMPANY B10

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	5.29	1.08	4.92	.04
EPS	.45	.35	1.29	.33
DPS	.54	.51	16.74	.003
DC	-.26	.32	-.82	.5
BV	-.14	.04	-3.36	.08
PE	.07	.06	1.07	.4
EY	.01	.04	.24	.83
DY	-.3	.17	-1.78	.22
R-Squared	.9937			
DurbWat	2.755			

COMPANY B11

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	5.64	1.36	4.15	.05
EPS	-.55	.15	-3.64	.07
DPS	11.68	1.59	7.35	.02
DC	.01	.2	.05	.96
BV	-.07	.04	-1.71	.22
PE	-.005	.002	-1.89	.2
EY	.05	.02	2.29	.15
DY	-.51	.104	-4.93	.04
R-Squared	.9713			
DurbWat	2.281			

COMPANY B12

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	-13.42	6.19	-2.17	.16
EPS	1.03	.35	2.95	.10
DPS	2.87	3.36	.86	.48
DC	.92	.29	1.12	.38
BV	.73	.38	1.9	.20
PE	.803	.21	3.8	.06
EY	.07	.05	1.31	.32
DY	-.23	.11	-2.2	.16
R-Squared	.9673			
DurbWat	2.738			

COMPANY B13

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	-521.35	682.5	-.76	.52
EPS	2.07	3.77	.55	.64
DPE	.77	3.9	.19	.96
DC	-197.21	136.7	-1.44	.29
BV	7.17	10.1	.71	.55
PE	30.35	11.8	2.56	.12
EY	.95	2.29	.41	.72
DY	.24	1.84	.13	.91
R-Squared	.8087	2.005		
DurbWat				

COMPANY B14

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	32.57	6.83	4.77	.04
EPS	-.34	.23	-1.48	.27
DPS	5.99	1.14	5.24	.03
DC	-.79	.15	-5.15	.04
BV	.66	.15	4.48	.05
PE	-1.29	.3	-4.29	.05
EY	-.04	.02	-2.01	.18
DY	-2.41	.37	-6.59	.02
R-Squared	.9938			
DurbWat	3.586			

COMPANY B15

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	18.26	34.03	.53	.65
EPS	11.37	3.11	3.65	.07
DPS	-4.19	4.82	-.87	.48
DC	-.84	3.51	-.24	.83
BV	.09	.85	.10	.93
PE	.09	1.86	.04	.97
EY	-2.08	1.04	-1.96	.19
DY	.68	.79	.85	.48
R-Squared	.9555			
DurbWat	1.698			

COMPANY B16

Independent Variable	Coefficient	std. error	t-value	sig. level
Constant	-29.411	42.15	-.70	.56
EPS	5.44	.89	6.1	.03
DPS	-.73	1.36	-.53	.65
DC	-1.27	1.86	-.68	.57
BV	.15	.15	1.03	.41
PE	4.08	2.77	1.48	.28
EY	.34	1.04	.33	.77
DY	-.32	.43	-.76	.53
R-Squared	.9548			
DurbWat	2.603			

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