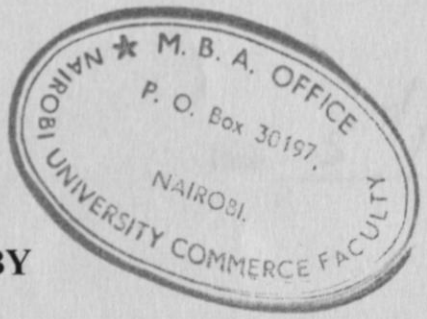
THE RELATIONSHIP BETWEEN SIZE, BOOK TO MARKET VALUE AND RETURNS OF NAIROBI STOCK EXCHANGE COMMON STOCKS



BY

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A MANAGEMENT RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF BUSINESS ADMINISTRATION, FACULTY OF COMMERCE, UNIVERSITY OF NAIROBI.

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DECLARATION

This Management project is my original work and has not been presented for a degree in any other University

Signed _____ Date 3rd March 2005

Oliech Jeremiah Olwe

This research project has been submitted for examination with my approval as the University Supervisor

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DEDICATION

To my Father William Oliech and Mother Eudiah who invested in me a lot of resources and constant encouragement to the end of the program.

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ABSTRACT

The objective of this study was to establish the relationship between the size of a company, the ratio of book to market equity value and the returns of common stock of all companies quoted on the Nairobi Stock Exchange from 1996 to 2000.

The hypothesis that the study had come up with, based on similar study carried by Fama and French (1992) on shares listed on the NYSE, AMEX and NASDAQ, was that there exist a negative relationship between size and return and positive relationship between the ratio of book to market equity and returns.

Data was collected from financial statements of the companies and Nairobi Stock Exchange. Size was determined by market capitalisation, the average return included both capital gain and dividend gain and book value was the amount of stockholders' equity less any preferred equity.

This data was analysed using regression analysis and cross tabulation. The F ratio and T ratio were used to test the significance of the model with a confidence level of 95%. The results could not conclusively confirm the results as achieved by Fama and French in 1993.

The findings of this research are that the size of the companies quoted on the NSE have no relationship with the returns of those companies and the ratio of book to market value has no relationship to returns of the companies.

The low levels of significance achieved in the study could be attributed to the small number of shares quoted on the NSE as compared to previous studies.

The study gives insight into the various factors that determine the level of return on shares quoted on NSE. It shows that returns of companies quoted on NSE are determined by other factors other than size and ratio of book to market value.

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ABBREVIATIONS

CAPM- Capital Asset Pricing Model

NSE- Nairobi Stock Exchange

APT- Arbitrage Pricing Model

EMH- Efficient Market Hypothesis

P/E Ratio- Price Earning Ratio

NYSE- New York Stock Exchange

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INTRODUCTION

1.1 BACKGROUND

Investors are faced by the dilemma of deciding which stocks to buy,hold or sell to achieve their aim of maximising returns of their investments. Studies have indicated that small firms systematically experienced average rates of return nearly 20% per annum greater than those of large firms even after accounting for differences in estimated betas. Rosenberg, Reid and Lanstein (1985) found that the average returns on U.S. stocks are positively related to the ratio of a firm's book value to market value.

There is always the question, should you concentrate your purchase of stocks in those firms that are small in capitalization relative to the market, where capitalisation is measured by market value of the firm's stock and stocks with high book- to- market value to achieve the aim of maximizing returns.

A study by French and Fama (1993) reached their findings in the process of examining the validity of the Capital Assets Pricing Model (CAPM).They found that there was an inverse relationship between size and returns and a direct relationship between book to equity value and returns. According to CAPM, every investment carries two distinct risks i.e. systematic risk; this is the risk of being in the market and cannot be diversified away, and unsystematic risk (unique risk), which is specific to a company's characteristics.

Some advantages of using Book – Market equity ratio Brealy and Myers (1991) include; book value provides a relatively stable intuitive measure of value, which can be compared to the market price. For investors who intuitively mistrust discounted cash flow estimates of value, it is a much simpler benchmark for comparison, given reasonably consistent accounting standards across firms, Book –to- Market equity ratio can be compared across similar firms for signs of under valuation or overvaluation and firms with negative earnings, which cannot be valued using price/earning ratios, can be evaluated using Book-to-Market equity ratio

Disadvantages of Book –to-Market equity ratio would include book value, like earnings, is affected by accounting decisions on depreciation and other variables. When accounting standards vary widely across firms, the Book –to- Market equity ratio may not be comparable across firms, book value may not carry much meaning for service firms that do not have significant fixed assets and book value can be negative if a firm has a sustained string of negative earnings reports, leading to negative Book – Market equity ratio.

Efficient markets assume that security prices at any time fully reflect all available information on a company. This means that the information contained in the size effect and book- to market value is already incorporated in the stock prices hence no room for abnormal returns. This study appears to contradict the efficient market hypothesis embodied in CAPM.

Size effects has received attention in an attempt to explain the abnormally. Various explanations have been given, for example transactions costs of investing in small

firms, tax effect, neglect of small firms by institutional investors and the level of trading activities.

A study carried out at the Johannesburg Stock Exchange in 1997 found no significant statistical explanation to confirm the hypotheses by French and Fama that there is a negative relationship between size and return and a positive relationship between book- to-market value and return. The relative small number of stocks listed on the Johannesburg Stock Exchange was given as the possible explanation.

This paper, attempted to find out whether these results hold in the Kenyan scenario i.e. the Nairobi Stock Exchange and the implications this has on an investor at the NSE.

1.2 STATEMENT OF THE PROBLEM

Where an investment is to be made, what basis should an investor use i.e. is the size of the company and the ratio of book to market equity important in the process?

Size of a company is important, as smaller firms are normally perceived to be riskier as pertains to the likelihood to survive a recession or a competitive challenge.
Book value represents the net book value of the firm's assets. It is expected that a higher investment in assets would translate into increased cash flow. Hence, the ratio of book-to- market value would be a good measure of expected return of investments.

Studies done have shown that smaller firm (in terms of market value of equity) earns higher returns than larger firms of equivalent risk, where risk is defined in terms of the market beta. Dimson and Marsh (1990) examined stocks in the United Kingdom from 1955 to 1984 and found that the annual returns of small stocks exceed that of large stock by 7% annually over the period. Bergstrom, Frashure and Chisholm (1991) reported a large size effect for French stock (small stock made 32.3 % per year between 1975 and 1989, while large stocks made 23.5% a year) and a much smaller size effect in Germany. Hamao (1989) reported a small firm premium of 5.1% for Japanese stocks between 1971 and 1988.

Banz (1981) in a study titled ' The Relationship between return and Market value of Common Stock'; found out that portfolios created on the basis of size earn abnormal returns of up to 40 percent annually when the portfolio is made up of small companies.

Fama and French also identified another anomaly in relation to book to market equity ratio and returns. They found that companies with low ratios of price to book value per share have done better than stocks high price to book ratios.

A local study by Mwangi (1999) testing whether the Price- Earning Ratio is an indicator of investment performance of ordinary shares on the NSE found that there is strong association between firms with high P/E ratios and high earnings growth rate although it faced several limitations for example limited time period i.e. six years of study only, lack of financial data, and non adjustment of inflation effects on earnings.

This study attempted to establish the relationship between size, book to market equity and average return for NSE common stocks from 1996 to 2000.

1.3 OBJECTIVES OF THE STUDY

The purpose of the study was to: -

1. Investigate the relationship between size of the company and common stock returns on the NSE.

2. Investigate the relationship between book-to-market equity and return common stock on NSE.

1.4 IMPORTANCE OF THE STUDY

1. The information can be used by both current and potential investors at NSE to decide the criteria used to evaluate whether to buy, hold or sell shares in a company. This is to make it possible to maximise the returns of their portfolios.

2. Used by scholars and academicians in their pursuit for knowledge and further research.

3. Companies considering issuing common stock on the NSE. This may be an indicator of possible subscription levels and impact on ability to raise capital.

1.5 HYPOTHESES

Recent empirical studies by Fama and French (1992, 1993) of common stock listed on the NYSE, AMEX and NASDAQ between 1963 and 1990 revealed the following:

- A negative relation between size and average return
- A positive relation between book/equity value and average return.

This report seeked to test the following hypothesis as far as Nairobi Stock Exchange is concerned.

Null Hypothesis Ho –there exists no relationship between size of the company and average return of the common stock quoted on the NSE.

Alternative Hypothesis Hi- there exists a relationship between size of the company and average return of the common stock quoted on the NSE

Null Hypothesis Ho –there exists no relationship between ratio of book- to market value and average return of the common stock quoted on the NSE.

Alternative Hypothesis -Hi there exists a relationship between ratio of book- to market value and average return of the common stock quoted on the NSE.

2. LITERATURE REVIEW.

2.1 SIZE EFFECT

Size of a company is measured by the number of common stock issued at any particular time multiplied by the market price of the share at the stock exchange.

Banz (1981) and Reinganum (1981) found that smaller firms (in terms of market value of equity) earn higher returns than larger firms of equivalent risk, where risk is defined in term of the market beta. They ranked all the stocks on NYSE and AMEX by market value and divided them into ten equally weighted portfolios. The risk-adjusted returns of small firms consistently experienced larger returns than the large firms.

This has lead to several possible explanations for the phenomena. These include, the transaction costs of investing in small stocks is significantly higher than the transaction costs of investing in larger stocks, and the premiums are estimated prior to these costs. While this is generally true, the differential transaction costs are unlikely to explain the magnitude of the premium across time and are likely to become even less critical for longer investment horizons as indicated by various studies. Stock and Whaley (1983) found that small firm's stock tends to have lower prices and higher bid- ask spreads, so transaction costs are relatively higher. Specifically, the proportional bid-ask spread moved from 2.93 percent for small value stock to 0.69 percent for large value stock, and the brokers commission was 3.84 percent for small firms and 2.02 percent for large firms, This indicated a total difference in transaction costs of 4.06 percent between large and small firms.

Another factor is the validity of CAPM. The Capital Assets Pricing Model may not be the right model for risk and betas underestimate the true risk of small stocks. Thus, the small firm premium is really a measure of the failure of beta to capture risk. Fama and French (1992) found that the relationship between beta and average return for NYSE common stocks over the last 50 years has been much weaker than predicted by CAPM.

Neglected firms have also been cited as a reason for the anomaly Arbel and Strebel (1983) considered an additional influence –attention/neglect. They measured attention in terms of the number of analysts who regularly follow the stock and dividend. They came up with three categories, highly followed, moderately followed and neglected. They confirmed the small firm effect but also found a neglected –firm effect caused by lack of information and limited institutional interest. The neglected firm concept applied across size classes.

Level of trading Activity- Reingnum (1992) investigated a buy and hold strategy for longer periods of time and had results that were similar to an annual trading strategy. Two holding period strategies were considered: a one-year holding period, with rebalancing every year, and a buy and hold strategy from 1963 to 1980. With annual rebalancing, the small firm portfolio grew from $1 in 1963 to over $46 without commissions, whereas $1 in the larger firm portfolio grew to about $4. With no rebalancing, a dollar in the small firm portfolio grew to about $11, whereas $1 in the larger firm portfolio again grew to about $4. The small firms out performed the large firms after considering risk.

Level of economic activity in the economy- Brown, Kleidon, and Marsh (1983) examined the performance over various intervals of time and concluded that the small firm effect is not stable. During some periods, they found the negative relationship derived by others, but during other periods for example 1967 to 1975, large firms outperformed small firms. Reingnum (1992) acknowledges this instability, but contends that the small firm effect is still a long run phenomenon.

Two studies by i.e. Banz (on NYSE) and Reinganum (AMEX) simultaneously examined the impact of size on the risk-adjusted rates of return. The risk –adjusted returns for extended periods (10 to 15 years) indicated that small firms consistently experienced significantly larger risk adjusted returns than the larger firms.
These studies on market efficiency are dual tests of the efficient market hypothesis and CAPM. Abnormal returns may occur because the markets are not efficient or because the market model does not provide correct estimates of expected returns.

Heaton and Lucas (1997) noted that the typical stockholder is the proprietor of a small, privately held business. Such an investor's income is, of course, particularly sensitive to the kinds of financial events that cause distress among small firms and distressed firms with low book to market value.

2.2 BOOK- TO- MARKET EQUITY VALUE

The ratio that relates the book value of a firm's equity to the market value of its equity was initially suggested by Rosenberg , Reid , and Lainstein (1985) as a predicator of stock returns. They found a positive relationship between the ratio and future stock returns and contended that this relationship was evidence against the EMH.

Book Value indicates the amount of stockholder' equity that relates to each share of outstanding stock.

$$\text{Book Value} = \frac{\text{Total Stock holders' Equity} - \text{Preferred Equity}}{\text{Number of Common Shares Outstanding}}$$

Preferred stock equity should be stated at liquidation price if other than book value. This is because the preferred shareholders would be paid this value in the event of liquidation.

The book value of equity is the difference between the book value of assets and the book value of liabilities. The measurement of the book value of assets is largely determined by accounting convention. In most countries, it is the original price paid for the assets reduced by any allowable depreciation on the assets. Consequently, the book value of an assets decreases as it ages. The book value of liabilities similarly reflects the 'at-issue' value of the liabilities.

Market Value of an asset reflects it's earning power and expected cash flow in an efficient market. Since the book value of an asset reflects its original cost, it might deviate significantly from market value if the earning power of the asset has increased

or declined significantly since its acquisition. This happens when the investors' perception on the company is positive.

A low price/ book value ratio has been considered a reliable indicator of under valuation in firms. In studies that parallel those done for price/ earnings ratios, the relationship between returns and price/book value ratios has been studied. The consistent findings from these studies is that there is a negative relationship between returns and price/book value ratios, that is, low price/ book value ratio stocks earn higher returns than high price/book value ratio stocks.

Rosenberg, Reid and Lanstein (1985) found that the average returns on U.S. stocks are positively related to the ratio of a firm's book value to market value. Between 1973 and 1984, the strategy of picking stocks of high book value/ price ratios (low price/book value ratios) yielded an excess return of 36 basis points a month. Fama and French (1992) in examining the cross- section of expected stocks returns between 1963 and 1990, established that the positive relationship between book value/ price ratios and average return persists in both the univariate tests and multivariate tests, and is even stronger than the size effect in explaining returns.

When they classified firms on the basis of book value/price (higher P/BV) class earned an average monthly return of 0.30%, while firms in the highest book value / price (lowest P/BV) class earned an average monthly return of 1.83% for the period 1963- 1990 period.

Chan, Hamao and Lakonishok (1991) found that the book value/market ratio has a strong role in explaining the cross section of average returns on Japanese stocks.

Capual, Rowley and Sharpe (1993) extended the analysis of Price/ Book Value ratios across other international markets and concluded that value stock, that is, stocks with low price/book value ratios, earned excess returns in every market that they analysed between 1981 and 1992.

The strongest support for the importance of this ratio was provided by Fama and French (1992) who evaluated the joint effects of market beta, size, E/P ratio, leverage and the book value market value ratio on a cross section average returns of common stock on NYSE, AMEX and NASDAQ .They analysed the hypothesized positive relationship between beta and expected returns, and concluded that the positive relationship found in empirical studies before 1969 disappeared between 1963 and 1990. In contrast, the positive relationship persisted when other variables were included. Average monthly return on portfolios formed on size and book to market equity were formed.

Fama and French (1992) pointed out that low price/ book value ratios might operate as a measure of risk, since firms with prices well below book value are more likely to be in financial distress and go out of business. Investors therefore have to evaluate for themselves whether the additional returns made by such firms justify the additional risk taken on by investing in them.

This relationship is important if it is that the company's book value per share has some relationship to the stock's economic worth e.g. if a company is liquidated and its assets sold for their book value, the book value would provide the floor of the stock's price (although this not be always the case)

The higher a company's 'price –to- book' ratio, the more likely the company is overvalued whereas, the lower the ratio the more likely the company is undervalued. Companies with market to book value less than 1 are serious candidates for under valuation and represent possible buys.

If markets are efficient, information contained in the size of the firm should already be impounded in the stock price and thus be independent of future performance. However, studies published in early 1980's revealed that compared to large firms; small capitalization firm's earned abnormal returns over extended market periods. The studies have been critised because they may not properly incorporate the differential risk of small firms into their analysis.

The strong and persistent differences in average returns between small and large firms probably meant that small firms really were riskier but evidently that risk measures were incomplete and that the CAPM and APT were at best misspecified and at worst simply false. Indeed, Reinganum regards his work as a test of the CAPM and the APT.

Before concluding, however that CAPM and APT are false, there is an economic problem that should be investigated. This problem has the potential to explain the small size effect. Because small firms are traded infrequently, risk measures obtained from short intervals returns data (such as daily); seriously understate the actual risk of holding a small firm portfolio, whatever the model the investors use to assess risk. Trading infrequency seems to be a powerful case of bias in risk assessments with short-lived data. Rather horrendous bias is induced in daily data and the bias is still

large and significant with returns measured over intervals as long as a month Christopher J and Edminister R (1983)

This misassessment of risk has the potential to explain why small firms, low price / earning ratio firms and possibly high dividend yield firms display large excess returns (after adjustment for risk). Position auto- correlation induced in portfolios of such firms because of infrequent trading results in downward biased measures of portfolio risk and corresponding overestimate of 'risked' average returns.

2.3 CONCLUSION OF LITERATURE REVIEW AND HOW IT RELATES TO CURRENT STUDY.

Firm size has emerged as a major predictor of future returns and an anomaly in the efficient market literature. There have been several attempts to explain the anomaly in terms of superior risk measurements, transaction costs, analysts' attention, trading activity, and differential information. In general, no single study has been able to explain these very unusual results.

Book to market equity capture the cross sectional variation in average returns and this also persists when other variables are included. Moreover, of the two variables, the book-to-market equity ratio seems to be more powerful and appears to subsume earnings per share and leverage. Fama and French multiple determination coefficient values were all in 90 percent to 95 percent range, so extremely high risk prices for the residuals would have to be invoked for the model not to fit well.

As indicated in the literature review, all these studies used average return over extended periods of time and applied linear regression to establish nature and level of relationship. Similar dependent and independent variables were therefore used in this study.

3. RESEARCH METHODOLOGY

3.1 POPULATION

The population under study was based on all the companies quoted on the Nairobi Stock Exchange. This is because the data required for companies quoted in the NSE is readily available. There are currently 51 quoted companies of the NSE. However, our study consisted of 40 companies due to various data inconsistency for example availability of data over shorter periods, suspension from trading over a period e.t.c.

The average return was computed for the period from 1996 to 2000 due to availability of data and the short-term nature of the investment horizon of the average investor on the NSE. The average return was based on the price movements per quarter and the simple average of the dividend issued by the various companies during the years.

3.2 DATA COLLECTION

The study made use of secondary data from published financial statements of companies quoted in the NSE from 1996 to 2000.

The data collected included: -

- Book Value- was collected from the annual reports published by the companies and the quarterly values derived using the SAS model.
- Stock prices- this was collected on quarterly basis from NSE

- Number of Shares issued by each company- this was also collected from the NSE.

3.3 DATA ANALYSIS

Data collected was analyzed using simple linear regression, multiple linear regression, and correlation analysis and cross tabulation.

Multiple linear regressions is often used to determine the effect of more than one independent variable on a particular dependent variable

The simple regression model used to address this issue is;

$Yi = \beta o + \beta Xt + Et$

The multilinear regression model used to address this issue is;

$Yi = \beta o + \beta 1X1t + \beta 2X2t + Et$

Where

Yi = the average return on the common stock.

X1t = size of the company (measured by market capitalisation)

X2t = ratio of book to market equity value.

Et = the error term.

βo= the intercept of the equation

$\beta i \ldots \beta k$ = the slope coefficient of each of the independent variables.

Assumptions of the model

1. The relationship between the dependent variable Yi and the independent variables is linear
2. The independent variable (Xi….Xt) is random. Also, no exact linear relationship exist between the independent variables
3. The expected value of the error term is 0
4. The variance of the error term is the same for all observations
5. The error term is normally distributed.
6. The error term (E t) is uncorrelated across observations.

The Significance Test- this was dealt with using two kinds of tests;

1. A test of the global models i.e. in which both independent variables are included. The significance test used was the F-test.
2. A test of each independent variable separately. The significance test was the T –test.

4. RESEARCH FINDINGS AND ANALYSIS

4.1 INTRODUCTION

This study had sought to establish the relationship between size, book to market value and returns of companies quoted on the NSE. It attempted returns of portfolios at two levels i.e.

-One portfolio, made up of small companies and another made up of big companies

-Portfolio of companies made up of companies with high book to market value ratio and another with a low ratio

4.2 INTRODUCING RESEARCH VARIABLES.

4.2.1 AVERAGE RETURN

Quarterly average return was computed for each company on the various portfolios and presented on Table 1. This was made up of capital gains/ losses and quarterly dividend yield. The dividend was the simple average of the annual declared and paid dividend for the various quarters.

Table 1: Average quarterly return of companies quoted on the NSE

YEAR	1996				1997				1998				1999				2000			
QUARTER	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
COMPANY																				
A.Baumann & Co.Ltd	-0.01	0.00	-0.03	0.21	-0.35	-0.14	-0.20	-0.10	0.03	-0.01	0.10	0.01	0.02	0.02	0.02	-0.09	0.00	-0.04	-0.08	-0.16
Bamburi Cement Ltd	0.19	0.01	-0.01	0.75	0.21	0.05	-0.19	0.18	-0.15	-0.10	-0.05	0.17	0.18	-0.19	0.10	-0.09	0.02	0.06	0.14	0.06
BAT Kenya Ltd.	-0.01	0.00	-0.03	0.21	-0.35	-0.14	-0.20	-0.10	0.03	-0.01	0.10	0.01	0.02	0.02	0.02	-0.09	0.00	-0.04	-0.08	-0.16
Barclays Bank Ltd	0.06	-0.05	-0.07	0.17	0.01	0.00	0.06	0.13	-0.01	0.04	0.12	0.16	0.16	-0.08	0.03	-0.05	0.05	0.09	0.01	0.00
Brooke Bond Ltd	0.04	0.01	-0.02	-0.16	-0.15	-0.01	-0.04	0.07	-0.02	0.20	-0.07	0.06	0.06	0.04	-0.14	-0.16	-0.05	-0.19	0.00	0.25
B.O.C Kenya Ltd	-0.04	-0.09	0.05	0.11	0.02	0.02	-0.05	0.00	0.01	0.05	0.04	0.02	0.02	0.00	0.00	-0.03	-0.03	-0.12	-0.21	0.05
Carbacid Investments Ltd	0.13	0.11	0.38	0.14	0.02	-0.08	-0.17	0.10	-0.06	0.03	-0.09	0.17	0.19	-0.07	0.09	-0.02	0.08	-0.01	-0.13	0.06
Car & General (K) Ltd	0.00	0.04	0.03	0.01	-0.12	-0.10	0.00	0.15	-0.34	-0.01	0.00	0.02	0.02	-0.03	-0.57	0.82	-0.04	0.08	0.94	-0.46
Crown Berger Ltd	-0.16	-0.23	-0.20	0.10	0.03	0.10	-0.11	0.21	-0.10	0.03	-0.12	0.16	0.16	0.18	0.23	0.08	-0.07	0.00	0.00	-0.20
C.F.C Bank Ltd	-0.08	-0.11	-0.05	0.23	-0.11	0.06	-0.11	0.08	-0.12	-0.04	-0.06	0.21	0.21	-0.18	0.03	-0.02	0.00	0.18	-0.20	-0.06
CMC Holdings Ltd	-0.03	0.03	0.04	0.17	0.02	0.11	-0.13	0.35	-0.25	-0.02	-0.01	-0.10	-0.10	-0.10	0.08	0.01	-0.01	-0.33	-0.14	-0.03
City Trust Ltd	0.02	0.14	-0.08	0.19	0.06	0.00	0.00	0.11	-0.09	-0.21	0.02	0.02	0.02	-0.07	-0.02	-0.01	0.02	-0.02	-0.02	0.16
Diamond Trust Bank (K)	0.01	-0.07	-0.15	0.00	-0.08	-0.08	-0.18	0.00	-0.02	-0.08	0.05	0.22	0.21	-0.02	-0.08	0.06	0.11	-0.12	-0.20	-0.19
Dunlop Kenya	0.02	0.04	0.03	0.14	-0.03	0.69	0.00	0.09	0.10	0.20	-0.29	0.32	0.32	-0.32	-0.11	-0.24	-0.16	-0.13	-0.05	-0.10
East African Breweries Ltd	0.08	0.09	0.05	0.14	0.05	-0.07	-0.08	0.06	-0.01	0.16	-0.01	0.22	0.23	0.21	0.10	-0.09	-0.01	-0.01	0.08	0.12
E.A.Cables Ltd	-0.05	0.06	-0.06	0.12	-0.05	-0.05	0.01	-0.06	-0.04	-0.12	-0.13	-0.02	0.29	-0.13	0.04	-0.07	-0.24	-0.23	-0.13	0.14
E.A.Packaging Ltd	0.01	0.02	0.00	0.00	-0.07	-0.02	-0.09	-0.28	-0.35	-0.27	-0.15	0.09	0.09	-0.11	-0.20	-0.20	0.22	0.03	0.08	-0.38
Eaagads Ltd	-0.19	0.01	0.01	0.01	0.03	0.08	0.54	-0.06	0.00	0.09	0.15	0.01	-0.01	0.01	-0.21	-0.15	-0.09	0.00	-0.01	-0.15
Express Ltd	0.08	0.12	0.09	-0.07	-0.08	-0.12	-0.08	-0.03	-0.29	-0.24	0.02	0.21	0.20	-0.19	-0.20	-0.21	0.05	0.00	-0.11	0.01
Firestone East Africa Ltd	0.07	0.12	0.06	0.16	-0.04	-0.01	-0.15	0.25	-0.05	-0.01	-0.07	0.22	0.21	-0.08	-0.05	-0.05	0.02	-0.15	0.00	0.02
Housing Finance Co Ltd	0.67	0.06	-0.19	0.20	0.00	-0.05	-0.11	0.14	-0.05	0.01	-0.02	0.07	0.05	-0.14	-0.10	-0.13	-0.06	-0.12	-0.14	-0.03

Table 1: Average quarterly return of companies quoted on the NSE

YEAR	1996				1997				1998				1999				2000			
QUARTER	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
COMPANY																				
I.C.D.C Investments Co Ltd	-0.21	0.03	0.12	0.29	0.10	0.40	-0.17	0.27	-0.10	0.03	-0.07	0.29	0.29	0.12	0.08	0.02	-0.05	0.00	0.07	0.06
Jubilee Insurance Co. Ltd	0.02	-0.03	-0.12	0.23	-0.06	-0.02	-0.06	0.21	0.01	-0.08	-0.02	0.15	0.15	-0.04	-0.06	-0.12	0.01	-0.08	-0.12	-0.10
Kakuzi	0.06	-0.02	0.06	0.04	0.02	0.26	-0.09	0.01	0.09	0.15	-0.05	0.02	0.02	-0.15	-0.02	-0.18	-0.08	-0.22	-0.08	-0.11
Kapchorua Tea Co. Ltd	0.00	0.04	0.03	0.02	0.01	0.01	0.01	0.04	0.06	0.23	0.08	0.24	0.23	0.24	0.04	0.00	0.00	0.00	0.00	0.00
Kenya Commercial Bank	-0.31	0.03	0.21	0.47	0.12	0.01	-0.16	0.04	-0.10	0.01	-0.12	0.08	0.04	-0.25	-0.07	-0.20	-0.07	-0.10	-0.11	0.07
Kenya National Mills Ltd.	-0.02	0.03	-0.04	-0.20	0.05	0.09	-0.04	0.29	0.16	-0.40	-0.24	0.21	0.20	-0.25	-0.17	-0.23	0.12	0.55	-0.45	-0.12
Kenya Power & Lighting	0.04	0.28	0.28	1.49	0.38	0.15	0.04	0.11	-0.06	0.08	-0.05	0.08	0.07	-0.11	-0.06	-0.17	0.05	-0.28	-0.25	-0.12
Limuru Tea Co. Ltd	-0.33	0.01	0.01	0.01	0.01	-0.13	-0.08	0.04	0.04	0.04	0.04	0.04	0.01	-0.01	-0.10	0.02	0.03	0.03	0.03	0.03
Marshalls (E.A.) Ltd	0.57	0.23	0.09	0.05	0.32	0.48	0.43	0.03	0.00	-0.23	-0.20	0.04	0.03	-0.10	0.03	0.02	-0.02	0.00	0.00	-0.21
National Bank of Kenya	-0.06	0.02	-0.15	0.16	0.01	-0.07	-0.12	0.05	-0.15	-0.11	-0.20	0.14	0.12	-0.25	-0.12	-0.10	-0.08	-0.15	0.02	0.05
National Industrial Credit	0.09	0.02	0.00	0.19	0.13	0.01	-0.07	0.03	-0.20	-0.04	-0.16	0.17	0.17	0.02	0.00	-0.01	-0.03	0.03	-0.05	-0.14
Nation Media Group	0.10	0.20	0.04	0.04	0.46	0.13	0.08	0.07	0.61	0.10	0.03	0.12	0.12	-0.05	-0.09	-0.12	-0.09	-0.19	-0.02	-0.04
Pan Africa Insurance Ltd	0.03	-0.08	-0.10	-0.04	0.06	0.15	-0.12	-0.11	-0.16	-0.03	-0.15	0.03	0.02	0.31	0.13	0.20	-0.19	-0.11	-0.07	-0.21
E.A.Portland Cement Ltd	0.31	0.09	-0.08	0.34	0.39	-0.01	-0.38	0.21	-0.26	-0.06	-0.09	0.09	0.07	-0.29	0.00	-0.25	0.07	0.00	0.14	-0.05
Sasini Tea & Coffee Ltd	0.19	-0.08	0.10	0.29	0.09	0.14	0.05	0.16	0.06	0.02	-0.04	-0.07	-0.08	-0.16	0.01	-0.11	-0.20	-0.10	0.00	0.03
Standard Newspapers Ltd	-0.07	-0.12	-0.11	0.51	0.52	1.35	0.09	0.13	-0.39	-0.34	-0.18	0.36	0.36	-0.20	-0.36	-0.12	0.01	-0.17	-0.23	0.08
Total Kenya Ltd	-0.32	-0.13	-0.12	0.17	-0.13	-0.06	-0.12	0.13	-0.25	-0.03	-0.05	0.29	0.30	0.01	0.11	-0.02	0.05	-0.01	0.12	0.01
Uchumi Supermarket Ltd	0.04	0.11	0.27	0.25	0.04	0.01	-0.02	0.19	-0.04	0.03	0.02	0.15	0.14	0.04	0.05	-0.17	0.04	0.04	0.03	0.13
Unga Group Ltd	0.05	0.04	0.03	0.00	0.01	-0.01	-0.11	0.45	0.84	-0.05	-0.26	0.04	0.03	-0.26	-0.25	-0.17	-0.01	0.39	-0.46	0.01

4.2.2 BOOK TO MARKET VALUE

Book to market value ratio was arrived at by computation of quarterly net book value and of quarterly market prices per share (Table 2). The book value appearing at the end of each financial year-end was used to derive the quarterly values using SAS.

Table 2: Ratio of Book to Market Value of Companies quoted on NSE per quarter

YEAR	1996				1997				1998				1999				2000			
QUARTER	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
COMPANY																				
A.Baumann & Co.Ltd	2.87	2.93	2.93	3.00	2.42	3.62	4.11	5.16	6.00	6.31	6.99	6.81	7.07	7.13	7.07	7.84	7.90	8.32	9.23	11.36
Bamburi Cement Ltd	0.89	0.81	0.85	0.89	0.52	0.42	0.39	0.46	0.38	0.42	0.45	0.47	0.42	0.57	0.57	0.69	0.73	0.72	0.65	0.63
BAT Kenya Ltd.	0.68	0.68	0.70	0.77	0.70	0.79	0.86	0.99	1.05	1.20	1.18	0.98	0.76	0.63	0.72	0.74	0.72	0.71	0.66	0.61
Barclays Bank Ltd	0.34	0.35	0.40	0.46	0.43	0.45	0.49	0.50	0.47	0.51	0.53	0.51	0.46	0.52	0.53	0.57	0.57	0.54	0.56	0.58
Brooke Bond Ltd	0.69	0.66	0.65	0.66	0.77	0.90	0.90	0.93	0.87	0.90	0.76	0.82	0.75	0.68	0.73	0.81	0.83	1.03	1.06	0.89
B.O.C Kenya Ltd	0.52	0.58	0.68	0.69	0.65	0.66	0.66	0.71	0.74	0.76	0.76	0.75	0.74	0.73	0.71	0.72	0.73	0.83	1.08	1.06
Carbacid Investments Ltd	1.19	1.08	1.01	0.75	0.68	0.68	0.77	0.95	0.90	0.99	1.00	1.14	1.02	1.15	1.11	1.18	1.12	1.16	1.35	1.29
Car & General (K) Ltd	1.56	1.31	1.17	1.05	0.97	1.03	1.07	1.00	0.81	1.15	1.09	1.05	1.05	1.15	2.91	1.72	1.88	1.78	0.92	1.66
Crown Berger Ltd	0.91	1.23	1.82	2.55	2.50	2.55	2.40	2.78	2.33	2.70	2.74	3.30	3.01	2.69	2.29	2.20	2.34	2.30	2.25	2.74
C.F.C Bank Ltd	0.44	0.53	0.66	0.76	0.67	0.81	0.82	0.98	0.96	1.15	1.26	1.41	1.22	1.54	1.56	1.65	1.71	1.50	1.94	2.14
CMC Holdings Ltd	1.21	1.31	1.34	1.35	1.21	1.24	1.16	1.39	1.05	1.43	1.49	1.58	1.88	2.29	2.32	2.47	2.62	4.08	4.86	5.06
City Trust Ltd	0.83	0.99	1.01	1.24	1.13	1.12	1.15	1.19	1.11	1.29	1.74	1.79	1.83	2.02	2.10	2.16	2.16	2.28	2.41	2.16
Diamond Trust Bank Ltd	0.41	0.42	0.44	0.49	0.46	0.45	0.43	0.47	0.44	0.46	0.54	0.56	0.50	0.53	0.61	0.59	0.55	0.64	0.82	1.02
Dunlop Kenya	0.55	0.55	0.55	0.59	0.59	0.71	0.48	0.54	0.53	0.49	0.41	0.57	0.44	0.65	0.74	1.00	1.20	1.37	1.42	1.51
East African Breweries Ltd	1.63	1.59	1.54	1.53	1.38	1.34	1.47	1.65	1.65	1.80	1.66	1.76	1.46	1.19	1.05	1.11	1.12	1.17	1.13	1.07
E.A.Cables Ltd	0.78	0.36	0.36	0.40	0.38	0.43	0.46	0.53	0.59	0.72	0.86	0.90	0.71	0.81	0.77	0.83	1.07	1.42	1.72	1.60
E.A.Packaging Ltd	0.67	0.69	0.69	0.71	0.73	0.79	0.80	0.88	1.20	1.80	2.38	2.74	2.47	2.77	3.43	4.17	3.22	2.84	2.34	3.35
Eaagads Ltd	0.90	1.13	1.14	1.15	1.16	1.17	1.13	0.76	0.85	0.91	0.89	0.82	0.85	0.87	1.11	1.31	1.40	1.34	1.28	1.42
Express Ltd	1.09	1.05	0.95	0.88	0.95	1.03	1.16	1.27	1.33	1.90	2.55	2.49	2.00	2.34	2.72	3.20	2.89	2.83	3.16	3.18
Firestone East Africa Ltd	0.30	0.30	0.29	0.29	0.26	0.29	0.31	0.38	0.32	0.36	0.38	0.43	0.37	0.40	0.43	0.46	0.46	0.55	0.56	0.56
Housing Finance Co Ltd	0.70	0.46	0.47	0.63	0.55	0.58	0.63	0.74	0.67	0.74	0.78	0.84	0.83	0.99	1.13	1.34	1.45	1.68	1.99	2.07
I.C.D.C Investments Co Ltd	0.51	0.66	0.68	0.66	0.58	0.60	0.47	0.59	0.43	0.41	0.38	0.53	0.68	1.00	1.33	1.67	2.01	2.07	1.87	1.63

Table 2: Ratio of Book to Market Value of Companies quoted on NSE per quarter

YEAR	1996				1997				1998				1999				2000			
QUARTER	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
COMPANY																				
Jubilee Insurance Co. Ltd	0.70	0.69	0.73	0.85	0.70	0.77	0.82	0.90	0.77	0.80	0.91	0.96	0.86	0.92	1.00	1.13	1.09	1.14	1.23	1.28
Kakuzi	0.89	0.83	0.86	0.85	0.88	0.96	0.84	1.01	1.06	1.00	0.88	0.92	0.88	1.00	0.99	1.19	1.27	1.62	1.76	1.97
Kapchorua Tea Co. Ltd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kenya Commercial Bank.k	1.03	1.66	1.79	1.63	1.21	1.17	1.25	1.62	1.67	1.95	2.01	2.36	2.23	2.89	2.98	3.58	3.74	4.09	4.54	4.21
Kenya National Mills Ltd.	0.93	0.95	0.93	0.97	1.23	1.20	1.13	1.23	1.00	0.90	1.55	2.07	1.67	2.10	2.35	2.88	2.56	1.73	3.39	4.17
Kenya Power & Lighting Ltd	2.10	2.21	1.89	1.61	0.69	0.54	0.51	0.53	0.51	0.58	0.57	0.63	0.61	0.68	0.72	0.85	0.78	1.02	1.26	1.30
Limuru Tea Co. Ltd	0.11	0.17	0.17	0.18	0.19	0.19	0.24	0.27	0.28	0.29	0.31	0.31	0.32	0.33	0.37	0.37	0.37	0.37	0.38	0.38
Marshalls (E.A.) Ltd	4.58	5.33	5.11	5.33	5.49	4.32	2.94	2.08	2.07	2.14	2.85	3.52	3.11	2.87	2.09	1.42	1.00	0.78	0.74	1.04
National Bank of Kenya Ltd	0.79	0.87	0.88	1.10	1.03	1.12	1.27	1.43	1.19	1.03	0.68	0.41	0.24	0.56	1.16	1.91	2.53	3.16	3.04	2.72
National Industrial Credit	0.31	0.30	0.31	0.35	0.34	0.35	0.41	0.50	0.52	0.69	0.74	0.91	0.80	0.81	0.84	0.88	0.93	0.94	1.03	1.25
Nation Media Group	1.01	0.93	0.79	0.77	0.78	0.57	0.54	0.54	0.53	0.35	0.34	0.34	0.32	0.35	0.40	0.47	0.54	0.68	0.70	0.74
Pan Africa Insurance Ltd	1.36	1.59	2.02	2.52	2.79	2.68	2.32	2.61	2.94	3.57	3.77	4.56	4.51	3.45	3.05	2.57	3.24	3.81	4.32	5.76
E.A.Portland Cement Ltd	0.31	0.39	0.49	0.66	0.53	0.39	0.39	0.62	0.54	0.80	0.92	1.06	0.92	1.11	0.89	0.96	0.82	0.93	1.02	1.36
Sasini Tea & Coffee Ltd	1.89	1.62	1.77	1.60	1.23	1.14	1.01	0.98	0.87	0.83	0.83	0.87	0.94	1.11	1.08	1.19	1.51	1.70	1.73	1.73
Standard Newspapers Group	0.40	0.46	0.55	0.66	0.47	0.34	0.16	0.16	0.15	0.26	0.39	0.45	0.28	0.24	0.17	-0.08	-0.36	-0.76	-1.37	-1.56
Total Kenya Ltd	0.19	0.28	0.33	0.38	0.33	0.38	0.41	0.47	0.43	0.60	0.65	0.75	0.63	0.70	0.69	0.78	0.78	0.82	0.75	0.77
Uchumi Supermarket Ltd	0.40	0.41	0.39	0.32	0.27	0.27	0.27	0.28	0.25	0.27	0.28	0.29	0.26	0.27	0.26	0.33	0.32	0.31	0.31	0.28
Unga Group Ltd	0.65	0.65	0.64	0.63	0.63	0.63	0.64	0.73	0.52	0.29	0.32	0.45	0.47	0.68	0.98	1.26	1.35	1.01	1.92	1.97

4.2.3 SIZE

The size of the companies was a function of the number of shares in issue as at the beginning of 1996 and the closing prices as at 31 December of each of the years under consideration (Table 3)

TABLE 3: MARKET CAPITALISATION OF COMPANIES INCLUDED IN THE ANALYSIS

	1996	1997	1998	1999	2000
	KShs.	KShs	KShs	KShs	KShs
A.Baumann & Co.Ltd	126,722,178	200,000,000	137,040,000	94,847,753	85,920,000
Bamburi Cement Ltd	7,077,344,138	8,632,668,000	7,445,149,938	7,321,787,286	6,050,000,000
BAT Kenya Ltd	4,725,000,000	4,429,154,050	5,738,000,000	4,453,478,400	3,080,000,000
Barclays Bank Ltd	12,187,626,120	14,000,401,260	18,705,469,320	15,266,936,700	13,948,554,780
Brooke Bond Ltd	8,211,000,000	12,898,913,367	13,065,866,100	9,527,194,031	12,249,249,469
B.O.C Kenya Ltd	1,269,125,000	1,277,911,250	1,390,375,250	1,009,875,000	652,742,499
Carbacid Investments Ltd	629,298,130	668,000,000	405,000,000	586,800,000	372,799,155
Car & General (K) Ltd	204,915,000	273,840,000	200,000,000	130,000,000	130,000,000
Crown Berger Ltd	1,520,000,000	1,502,904,752	1,579,500,000	1,178,973,396	922,556,250
C.F.C Bank Ltd	445,591,200	471,950,000	359,827,650	322,987,500	222,795,600
CMC Holdings Ltd	785,322,368	937,175,160	801,225,480	644,470,588	470,649,655
City Trust Ltd	108,317,196	150,000,000	119,053,260	92,038,757	64,000,000
Diamond Trust Bank (K)td	2,544,000,000	2,507,692,308	2,654,566,020	2,220,002,073	1,690,926,000
Dunlop Kenya	102,000,000	59,713,026	64,897,115	57,182,302	36,502,715
East African Breweries Ltd	632,812,500	671,725,767	491,583,120	638,738,818	377,560,000
E.A.Cables Ltd	5,411,280,651	5,392,378,750	6,940,250,000	5,699,000,000	4,753,093,750

TABLE 3: MARKET CAPITALISATION OF COMPANIES INCLUDED IN THE ANALYSIS

	1996	1997	1998	1999	2000
	KShs.	KShs	KShs	KShs	KShs
E.A.Packaging Ltd	529,918,620	564,929,411	399,024,000	340,109,095	264,000,000
Eaagads Ltd	165,608,550	213,543,000	150,000,000	98,300,000	91,604,792
Express Ltd	408,000,000	376,319,020	277,622,100	238,348,500	194,130,000
Firestone East Africa Ltd	5,085,118,840	5,248,912,500	6,909,276,000	5,116,235,000	3,251,039,232
Housing Finance Co Ltd	1,673,204,134	1,756,950,000	1,717,800,407	1,218,327,708	1,005,000,000
I.C.D.C Investments Co Ltd	842,679,205	945,884,771	1,090,800,000	728,386,800	586,800,000
Jubilee Insurance Co. Ltd	969,397,983	1,051,729,920	1,143,006,305	828,000,000	630,000,000
Kakuzi	273,840,000	358,700,916	272,267,034	200,516,040	187,312,500
Kapchorua Tea Co. Ltd	8,084,012,862	9,196,400,973	9,879,130,800	7,566,194,626	8,062,762,500
Kenya Commercial Bank Ltd	1,910,999,903	1,881,599,904	2,202,361,626	1,705,325,725	1,113,000,000
Kenya National Mills Ltd.	1,815,362,955	1,761,800,000	1,749,000,000	1,259,362,500	1,053,000,000
Kenya Power & Lighting Ltd	2,472,600,711	2,382,860,059	2,638,200,000	2,067,000,000	1,462,858,285
Limuru Tea Co. Ltd	200,000,000	266,903,100	173,638,500	127,392,446	96,860,570
Marshalls (E.A.) Ltd	224,292,569	283,200,000	267,354,720	167,216,400	131,843,700
National Bank of Kenya Ltd	2,679,276,225	2,940,000,000	2,744,000,000	2,357,250,752	2,771,821,639
National Industrial Credit Ltd	2,696,593,396	3,296,582,050	2,763,599,859	2,704,122,105	2,938,600,489
Nation Media Group	1,299,131,798	2,337,208,160	4,910,436,730	3,578,030,207	2,455,895,765
Pan Africa Insurance Ltd	615,384,615	595,119,040	399,742,800	526,979,370	267,711,772
E.A.Portland Cement Ltd	1,845,000,000	1,800,000,000	1,845,750,000	1,705,199,913	1,077,999,945
Sasini Tea & Coffee Ltd	1,492,062,159	1,408,000,000	1,527,288,000	1,146,000,000	666,000,000
Standard Newspapers Group	102,494,872	141,645,564	108,552,699	90,739,850	57,592,112
Total Kenya Ltd	3,640,512,299	3,680,000,000	4,481,312,640	3,525,723,195	3,059,551,953
Uchumi Supermarket Ltd	2,138,880,100	2,340,000,000	2,471,117,905	1,853,485,270	1,297,255,703
Unga Group Ltd	1,233,947,294	1,250,921,600	1,247,808,596	1,006,000,000	641,790,042

4.3 FINDINGS AND DISCUSSIONS

4.3.1 RELATIONSHIP BETWEEN SIZE AND RETURN

4.3.1.1 ANALYSIS OF PORTFOLIOS OF ALL COMPANIES OVER THE PERIOD (i.e. 1996 –2000)

The tables 4 and 5 below summaries the findings relationship between size and average returns of both small and large companies over a period of 20 quarters covering between 1996 and 2000.

Two portfolios are then formed using a 50% quartile to divide between small companies and large companies. This lead to two portfolios each with 20 companies. Quarterly simple average returns are computed to measure for the differences in the two portfolios.

Table 4 and 5 summarises the overall findings of the small and large companies over the whole period with a critical value of 2.18

Table 4: Explanatory power of the overall models 1996-2000- Large size companies

	NOBS	Beta	Alpha	R-Square	Residual St.Dev	Standard Error of Alpha	Beta	t- ratio of beta	Comments
YEAR									
1996	20	(0.0000)	0.0984	0.0020	0.1424	0.0610	0.0000	(0.1865)	NS
1997	20	0.0000	0.0026	0.0240	0.0900	0.0339	6.7890	0.6464	NS
1998	20	0.0000	0.0188	0.0015	0.0746	0.0294	0.0000	0.1594	NS
1999	20	0.0000	(0.0145)	0.0157	0.0632	0.0254	0.0000	0.5211	NS
2000	20	0.0000	(0.0652)	0.2269	0.0594	0.0201	4.7623	2.2336	S

NS- NOT SIGNIFICANT
S-SIGNIFICANT

The results above indicted that there is no significant statistical relationship between large companies and average return. The nature of the relationship shift from -0.0145 to 0.0984 over the period showing varying relationships between the large companies and return.

Table5: Explanatory power of the overall models 1996-2000- Small size companies

	NOBS	Beta	Alpha	R-Square	Residual St.Dev	Standard Error of Alpha	Beta	t- ratio of beta	Comments
YEAR									
1996	20	0.0000	0.0269	0.0042	0.0836	0.0329	0.0000	0.2664	NS
1997	20	0.0000	(0.0155)	0.0989	0.1581	0.0651	0.0000	1.3663	NS
1998	20	0.0000	(0.0311)	0.0003	0.0843	0.0300	0.0000	0.0704	NS
1999	20	0.0000	(0.0284)	0.0227	0.0786	0.0291	0.0000	0.6287	NS
2000	20	0.0000	(0.0407)	0.0002	0.0710	0.0271	8.3000	0.0516	NS

The results above indicted that there is no significant statistical relationship between small companies and average return. The nature of the relationship shift from -0.0407 to 0.0269 over the period showing varying relationship between the small companies and return.

Table 6: 4.3.1.2 ANALYSIS OF INDIVIDUAL COPMANIES OVER THE PERIOD (1996-2000)

COMPANY	NOBS	Beta	Alpha	R-Square	Standard Error of Beta	Alpha	t- ratio of beta	Comments
A.Baumann & Co.Ltd	20	0.003	-0.064	0.005	0.012	0.078	0.292	NS
Bamburi Cement Ltd	20	0.513	-0.238	0.161	0.284	0.171	1.805	NS
BAT Kenya Ltd	20	0.170	-0.181	0.064	0.157	0.131	1.080	NS
Barclays Bank Ltd	20	0.181	-0.050	0.021	0.303	0.152	0.597	NS
Brooke Bond Ltd	20	0.165	-0.152	0.021	0.238	0.197	0.694	NS
B.O.C Kenya Ltd	20	-0.196	0.140	0.122	0.128	0.097	-1.533	NS
Carbacid Investments Ltd	20	0.046	-0.007	0.005	0.164	0.170	0.279	NS
Car & General (K) Ltd	20	-0.204	0.289	0.083	0.165	0.229	-1.236	NS
Crown Berger Ltd	20	0.185	-0.443	0.316	0.066	0.165	2.802	S
C.F.C Bank Ltd	20	-0.016	0.016	0.003	0.069	0.090	-0.224	NS
CMC Holdings Ltd	20	-0.044	0.070	0.127	0.028	0.067	-1.575	NS
City Trust Ltd	20	-0.008	0.024	0.002	0.046	0.077	-0.179	NS
Diamond Trust Bank Kenya	20	-0.229	0.091	0.080	0.188	0.107	-1.214	NS
Dunlop Kenya	20	-0.218	0.190	0.045	0.156	0.130	-1.396	NS
East African Breweries Ltd	20	0.084	-0.052	0.045	0.093	0.133	0.895	NS
E.A.Cables Ltd	20	-0.080	0.026	0.067	0.072	0.064	-1.108	NS
E.A.Packaging Ltd	20	-0.005	-0.074	0.001	0.035	0.079	-0.141	NS
Eaagads Ltd	20	-0.139	0.165	0.036	0.175	0.195	-0.793	NS
Express Ltd	20	-0.003	-0.043	0.000	0.040	0.086	-0.066	NS
Firestone East Africa Ltd	20	-0.209	0.102	0.028	0.298	0.119	-0.701	NS
Housing Finance Co Ltd	20	-0.074	0.039	0.126	0.047	0.052	-1.567	NS
I.C.D.C Investments Co Ltd	20	-0.056	0.147	0.047	0.061	0.068	-0.911	NS
Jubilee Insurance Co. Ltd	20	-0.137	0.118	0.048	0.147	0.139	-0.928	NS
Kakuzi	20	-0.168	0.168	0.231	0.075	0.085	-2.258	NS
Kapchorua Tea Co. Ltd	20	95.323	0.000	0.908	7.347	0.008	12.975	S
Kenya Commercial Bank	20	-0.054	0.126	0.132	0.033	0.089	-1.611	NS
Kenya National Mills Ltd.	20	-0.069	0.100	0.065	0.063	0.127	1.691	NS
Kenya Power & Lighting L	20	0.287	-0.165	0.144	0.170	0.177	1.691	NS
Limuru Tea Co. Ltd	20	0.152	-0.039	0.057	0.150	0.045	1.013	NS
Marshalls (E.A.) Ltd	20	0.065	-0.133	0.286	0.025	0.081	2.606	S
National Bank of Kenya Ltd	20	-0.006	-0.040	0.002	0.032	0.053	-0.189	NS
National Industrial Credit L	20	-0.084	0.060	0.050	0.089	0.065	-0.950	NS
Nation Media Group	20	0.151	-0.012	0.021	0.247	0.146	0.611	NS
Pan Africa Insurance Ltd	20	-0.019	0.038	0.019	0.034	0.114	-0.571	NS
E.A.Portland Cement Ltd	20	-0.058	0.041	0.006	0.177	0.146	-0.330	NS
Sasini Tea & Coffee Ltd	20	0.016	-0.015	0.002	0.084	0.109	0.194	NS
Standard Newspapers Gro	20	0.170	0.058	0.064	0.158	0.096	1.076	NS
Total Kenya Ltd	20	0.359	-0.192	0.214	0.167	0.101	2.153	NS
Uchumi Supermarket Ltd	20	0.806	-0.169	0.066	0.480	0.146	1.126	NS
Unga Group Ltd	20	0.806	-0.169	0.072	0.136	0.128	-1.179	NS

S SIGNIFICANT
NS- NOT SINIFICANT

The results above indicate that of the 40 companies selected; only 3 have significant relationship between size and average return.

4.3.1.3 CROSS TABULATION RESULTS BETWEEN SIZE AND RETURN

A further analysis was carried out using cross tabulation analysis to get a more thorough understanding and overcome any weaknesses of using linear regression for analysis. The results (Appendix 2) indicated that from the period 1996- 2000, the continuity correction range from 0.000 to 0.906 hence the results confirm that there is no relationship between size and returns. These results are consistent with the findings arrived at when using linear regression.

4.3.2RELATIONSHIP BETWEEN BOOK-TO-MARKET EQUITY AND RETURNS.

To evaluate the effect of book to market equity value on returns, two portfolios were formed by constructing a portfolio with low book to market value and one with high book to market value. Quarterly simple average returns were computed which were then translated into annual returns. (Table 7 and 8)

4.3.2.1 ANALYSIS OF PORTFOLIOS OF COMPANIES WITH HIGH RATIO

Table 7: Explanatory power of the overall model 1996-2000- High ratio

	NOBS	Beta	Alpha	R-Square	Residual St.Dev	Standard Error of Alpha	Beta	t- ratio of beta	Comments
YEAR									
1996	20	0.0351	0.0263	0.0189	0.1409	0.0871	0.0613	0.5719	NS
1997	20	0.0840	-0.0921	0.3568	0.0890	0.0424	0.0274	3.0707	S
1998	20	-0.0397	0.0380	0.2114	0.0624	0.0326	0.0186	-2.1348	NS
1999	20	-0.0097	0.0058	0.0095	0.0828	0.0486	0.0240	-0.4038	NS
2000	20	-0.0138	-0.0119	0.0383	0.0699	0.0430	0.0168	-0.8230	NS

The results above indicted that there is no significant statistical relationship between companies with high book to market ratio and average return. The nature of the relationship shift from -0.0921 to 0.038 over the period showing varying relationship between high ratio shares and return.

Table 8: Explanatory power of the overall model 1996-2000- Low ratio

	NOBS	Beta	Alpha	R-Square	Residual St.Dev	Standard Error of Alpha	Standard Error of Beta	t- ratio of beta	Comments
YEAR									
1996	20	0.044	0.017	0.011	0.080	0.050	0.102	0.429	S
1997	20	0.038	0.054	0.002	0.139	0.091	0.192	0.199	S
1998	20	-0.198	0.124	0.236	0.077	0.046	0.086	-2.292	NS
1999	20	-0.095	0.051	0.175	0.054	0.031	0.050	-1.902	NS
2000	20	-0.006	-0.019	0.002	0.067	0.025	0.031	-0.193	NS

The results above indicted that there is no significant statistical relationship between companies with low book to market ratio and average return. The nature of the relationship shift from -0.019 to 0.124 over the period showing varying relationship between low ratio shares and return.

Table 9: 4.3.2.2 ANALYSIS OF INDIVIDUAL COMPANIES OVER THE PERIOD (1996-2000)

	NOBS	Beta	Alpha	R-Square	Standard Error of Beta	Standard Error of Alpha	t- ratio of beta	Comm.
COMPANY								
A.Baumann & Co.Ltd	20	0.003	-0.064	0.005	0.012	0.078	0.292NS	
Bamburi Cement Ltd	20	0.513	-0.238	0.161	0.284	0.171	1.805NS	
BAT Kenya Ltd	20	0.170	-0.181	0.064	0.157	0.131	1.080NS	
Barclays Bank Ltd	20	0.181	-0.050	0.021	0.303	0.152	0.597NS	
Brooke Bond Ltd	20	0.165	-0.152	0.021	0.238	0.197	0.694NS	
B.O.C Kenya Ltd	20	-0.196	0.140	0.122	0.128	0.097	-1.533NS	
Carbacid Investments Ltd	20	0.046	-0.007	0.005	0.164	0.170	0.279NS	
Car & General (K) Ltd	20	-0.204	0.289	0.083	0.165	0.229	-1.236NS	
Crown Berger Ltd	20	0.185	-0.443	0.316	0.066	0.165	2.802S	
C.F.C Bank Ltd	20	-0.016	0.016	0.003	0.069	0.090	-0.224NS	
CMC Holdings Ltd	20	-0.044	0.070	0.127	0.028	0.067	-1.575NS	
City Trust Ltd	20	-0.008	0.024	0.002	0.046	0.077	-0.179NS	
Diamond Trust Bank(K) Ltd	20	-0.229	0.091	0.080	0.188	0.107	-1.214NS	
Dunlop Kenya	20	-0.218	0.190	0.045	0.156	0.130	-1.396NS	
East African Breweries Ltd	20	0.084	-0.052	0.045	0.093	0.133	0.895NS	
E.A.Cables Ltd	20	-0.080	0.026	0.067	0.072	0.064	-1.108NS	
E.A.Packaging Ltd	20	-0.005	-0.074	0.001	0.035	0.079	-0.141NS	
Eaagads Ltd	20	-0.139	0.165	0.036	0.175	0.195	-0.793NS	
Express Ltd	20	-0.003	-0.043	0.000	0.040	0.086	-0.066NS	
Firestone East Africa Ltd	20	-0.209	0.102	0.028	0.298	0.119	-0.701NS	
Housing Finance Co Ltd	20	-0.074	0.039	0.126	0.047	0.052	-1.567NS	
I.C.D.C Investments Co Ltd	20	-0.056	0.147	0.047	0.061	0.068	-0.911NS	
Jubilee Insurance Co. Ltd	20	-0.137	0.118	0.048	0.147	0.139	-0.928NS	
Kakuzi	20	-0.168	0.168	0.231	0.075	0.085	-2.258NS	
Kapchorua Tea Co. Ltd	20	95.323	0.000	0.908	7.347	0.008	12.975S	
Kenya Commercial Bank	20	-0.054	0.126	0.132	0.033	0.089	-1.611NS	
Kenya National Mills Ltd.	20	-0.069	0.100	0.065	0.063	0.127	1.691NS	
Kenya Power & Lighting	20	0.287	-0.165	0.144	0.170	0.177	1.691NS	
Limuru Tea Co. Ltd	20	0.152	-0.039	0.057	0.150	0.045	1.013NS	
Marshalls (E.A.) Ltd	20	0.065	-0.133	0.286	0.025	0.081	2.606S	
National Bank of Kenya Ltd	20	-0.006	-0.040	0.002	0.032	0.053	-0.189NS	

Table 9: 4.3.2.2 ANALYSIS OF INDIVIDUAL COMPANIES OVER THE PERIOD (1996-2000)

	NOBS	Beta	Alpha	R-Square	Standard Error of Beta	Alpha	t- ratio of beta	Comm.
COMPANY								
National Industrial Credit	20	-0.084	0.060	0.050	0.089	0.065	-0.950NS	
Nation Media Group	20	0.151	-0.012	0.021	0.247	0.146	0.611NS	
Pan Africa Insurance Ltd	20	-0.019	0.038	0.019	0.034	0.114	-0.571NS	
E.A.Portland Cement Ltd	20	-0.058	0.041	0.006	0.177	0.146	-0.330NS	
Sasini Tea & Coffee Ltd	20	0.016	-0.015	0.002	0.084	0.109	0.194NS	
Standard Newspapers Group	20	0.170	0.058	0.064	0.158	0.096	1.076NS	
Total Kenya Ltd	20	0.359	-0.192	0.214	0.167	0.101	2.153NS	
Uchumi Supermarket Ltd	20	0.806	-0.169	0.066	0.480	0.146	1.126NS	
Unga Group Ltd	20	0.806	-0.169	0.072	0.136	0.128	-1.179NS	

NS- NOT SIGNIFICANT
S-SIGNIFICANT
Com.- Comments

The results above indicate that of the 40 companies selected; only 3 have significant relationship between size and average return.

4.3.2.3 CROSS TABULATION RESULTS BETWEEN BOOK TO MARKET VALUE AND RETURN

A further analysis was carried out using cross tabulation analysis. The results (Appendix 2) indicated that from the period 1996- 2000, the continuity correction range from 0.000 to 0.90, hence the results confirm that there is no relationship between book to market value ratio and returns. These results are consistent with the findings arrived at when using linear regression.

5. SUMMARY AND CONCLUSIONS

5.1 SUMMARY AND CONCLUSIONS

Based on the results presented above, there is no relationship between size of a company and average return of common stock quoted on the NSE. We can also conclude that there exists no relationship between book to market value and average return of common stock quoted on the NSE.

In Fama and French analysis of stock between 1963- 1990, stocks of small companies appear to systematically outperform stocks of large companies. They also found that stocks with low ratios of price to book value did better than stocks with high price to book ratios.

Their conclusions were that: -

-Beta does not seem to help explain the cross section of average stock returns AND;

- Two easily measured variables, size and book to book to market equity provide a simple and powerful characterization of the cross section of average returns.

The results cannot confirm the negative relationship between size and return and a positive relationship between book to market value and return as achieved by Fama and French. This means that the results cannot be used in any application that requires the estimates of expected return such as selecting portfolios, evaluating portfolio performance and estimating the cost of capital.

The implication of these findings is that investors may not use them to improve returns of their investments on the NSE. A study by Chan and Chen (1988) show that firm size is negatively correlated with estimated market betas but after controlling for

beta, firm size had no explanatory power for the average returns across the size ranked portfolios.

The measure of size as used in this report i.e. market capitalization, may be a possible explanation for the results. Berk (1997) believed that market capitalisation is not only a measure of a firm's size but also a measure of a firm's discount rate. Other measures of size show no evidence of a relation between size and return.

5.2 LIMITATIONS OF THE STUDY

1. Period of study- this study covered the period between 1996 to 2000, which is a relatively short period of study. Returns in this period could have been affected the same cyclical economics factors.
2. Quarterly data was used to compute the average return. This was due to limitation of data.

5.3 SUGGESTIONS FOR FUTHER RESEARCH

1. A longer period of study is recommended. This study covered the period between 1996 to 2000, which is a relatively short period of study. Returns in this period could have been affected the same cyclical economics factors. Brown, Kleidon (1983) examined the performance over various intervals of time and concluded that the small firm effect is not stable.

2. Quarterly data was used to compute the average return. A study could be carried out on average monthly returns, which would better compare to similar studies carried in other regions.
3. Using a measure of size for companies other than market capitalization.

APPENDIX 1

Companies Listed on the Nairobi Stock Exchange.

AGRICULTURAL SECTOR

1. Brooke Bond Ltd. Ord 10.00
2. Kakuzi Ltd. Ord 5.00
3. *Rea Vipingo Plantations Ltd. Ord 5.00
4. Sasini Tea and Coffee Ltd. Ord 5.00
5. *Williamson Tea Kenya Ltd. Ord 5.00
6. Kapchorua Tea Co. Ltd. Ord 5.00
7. *Kenya Orchards Ltd. Ord 5.00
8. Limuru Tea Ltd. Ord 5.00
9. *Eaagads Ltd. Ord 1.25

COMMERCIAL AND SERVICES SECTORS

10. *African Lakes Corporation PLC Ord. 5.00
11. Car and General (K) Ltd Ord. 5.00
12. Express Ltd Ord.5.00
13. CMC Holdings Ltd. Ord 5.00
14. Hutchings Biemer Ltd. Ord 5.00
15. *Kenya Airways Ltd. Ord 5.00
16. Marshalls (E.A) Ltd. Ord 5.00
17. Standard Newspapers Group Ltd. Ord 5.00
18. Nation Media Group Ltd. Ord 5.00
19. *Tourism Promotion Services Ltd. Ord 5.00
20. Uchumi Supermarkets Ltd. Ord 5.00
21. A. Baumann and Co. Ltd. Ord 5.00

FINANCE AND INVESTMENT SECTOR

22. Barclays Bank Ltd. Ord 5.00
23. C.F.C Bank Ltd. Ord 5.00
24. Diamond Trust Bank Kenya Ltd. Ord 5.00
25. Housing Finance Co. Ltd. Ord 5.00
26. ICDC Investment Co. Ltd. Ord 5.00
27. Jubilee Insurance Co. Ltd. Ord 5.00
28. Kenya Commercial Bank Ltd. Ord 10.00
29. National Bank of Kenya Ltd. Ord 5.00
30. NIC Bank Ltd. Ord 5.00
31. Pan African Insurance Ltd. Ord 5.00
32. *Standard Chartered Bank Ltd. Ord 5.00
33. City Trust Ltd. Ord 5.00

INDUSTRIAL AND ALLIED SECTOR

34. *Athi River Mining Ltd. Ord 5.00
35. B.O.C Kenya Ltd. Ord 5.00
36. Bamburi Cement Ltd. Ord 5.00
37. British American Tobacco Kenya Ltd. Ord 10.00
38. Carbacid Investment Ltd. Ord 5.00
39. Crown Berger Ltd. Ord 5.00
40. Dunlop Kenya Ord. 5.00
41. E.A Cables Ltd. Ord 5.00
42. E. A Portland Cement Ltd. Ord 5.00
43. East Africa Breweries Ltd. Ord 10.00
44. Firestone East Africa Ltd. Ord 5.00
45. Kenya National Mills Ltd. Ord 5.00
46. *Kenya Oil Co. Ltd. Ord 5.00
47. *Mumias Sugar Co. Ltd. Ord 2.00
48. Kenya Power and Lighting Co. Ltd. Ord 20.00
49. Total Kenya Co. Ltd. Ord 5.00
50. Unga Group Ltd. Ord 5.00
51. *E. A Packaging Ltd. Ord 5.00

** Excluded from the analysis because of data gaps partly due to listing beyond the study period.*

APPENDIX 2

CROSS TABULATION RESULTS

2.1 BOOK TO MARKET VALUE RATIO

1996

Return 1996 * Book to market ratio 1996 Crosstabulation

			Book to market ratio 1996		
			Low	High	Total
Return 1996	Low	Count	11	8	19
		% of Total	27.5%	20.0%	47.5%
	high	Count	9	12	21
		% of Total	22.5%	30.0%	52.5%
Total		Count	20	20	40
		% of Total	50.0%	50.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.902[b]	1	.342		
Continuity Correction[a]	.401	1	.527		
Likelihood Ratio	.906	1	.341		
Fisher's Exact Test				.527	.264
Linear-by-Linear Association	.880	1	.348		
N of Valid Cases	40				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.50.

1997

Return 1997 * Book to market ratio 1997 Crosstabulation

			Book to market ratio 1997		
			Low	High	Total
Return 1997	Low	Count	9	11	20
		% of Total	22.5%	27.5%	50.0%
	high	Count	11	9	20
		% of Total	27.5%	22.5%	50.0%
Total		Count	20	20	40
		% of Total	50.0%	50.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.400[b]	1	.527		
Continuity Correction[a]	.100	1	.752		
Likelihood Ratio	.401	1	.527		
Fisher's Exact Test				.752	.376
Linear-by-Linear Association	.390	1	.532		
N of Valid Cases	40				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.00.

1998

Return 1998 * Book to market ratio 1998 Crosstabulation

			Book to market ratio 1998		
			Low	High	Total
Return 1998	Low	Count	8	12	20
		% of Total	20.0%	30.0%	50.0%
	high	Count	12	8	20
		% of Total	30.0%	20.0%	50.0%
Total		Count	20	20	40
		% of Total	50.0%	50.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.600[b]	1	.206		
Continuity Correction[a]	.900	1	.343		
Likelihood Ratio	1.611	1	.204		
Fisher's Exact Test				.343	.172
Linear-by-Linear Association	1.560	1	.212		
N of Valid Cases	40				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.00.

1999

Return 1999 * Book to market ratio 1999 Crosstabulation

			Book to market ratio 1999		
			Low	High	Total
Return 1999	Low	Count	8	12	20
		% of Total	20.0%	30.0%	50.0%
	high	Count	12	8	20
		% of Total	30.0%	20.0%	50.0%
Total		Count	20	20	40
		% of Total	50.0%	50.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.600[b]	1	.206		
Continuity Correction[a]	.900	1	.343		
Likelihood Ratio	1.611	1	.204		
Fisher's Exact Test				.343	.172
Linear-by-Linear Association	1.560	1	.212		
N of Valid Cases	40				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.00.

2000

Return 2000 * Book to market ratio 2000 Crosstabulation

			Book to market ratio 2000		
			Low	High	Total
Return 2000	Low	Count	9	11	20
		% of Total	22.5%	27.5%	50.0%
	high	Count	11	9	20
		% of Total	27.5%	22.5%	50.0%
Total		Count	20	20	40
		% of Total	50.0%	50.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.400[b]	1	.527		
Continuity Correction[a]	.100	1	.752		
Likelihood Ratio	.401	1	.527		
Fisher's Exact Test				.752	.376
Linear-by-Linear Association	.390	1	.532		
N of Valid Cases	40				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.00.

2.2 COMPANY SIZE AND AVERAGE RETURN

1996

Return 1996 * Size of company 1996 Crosstabulation

			Size of company 1996		
			small	big	Total
Return 1996	Low	Count	11	8	19
		% of Total	27.5%	20.0%	47.5%
	high	Count	9	12	21
		% of Total	22.5%	30.0%	52.5%
Total		Count	20	20	40
		% of Total	50.0%	50.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.902[b]	1	.342		
Continuity Correction[a]	.401	1	.527		
Likelihood Ratio	.906	1	.341		
Fisher's Exact Test				.527	.264
Linear-by-Linear Association	.880	1	.348		
N of Valid Cases	40				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.50.

1997

Return 1997 * Size of company 1997 Crosstabulation

			Size of company 1997		
			small	big	Total
Return 1997	Low	Count	10	10	20
		% of Total	25.0%	25.0%	50.0%
	high	Count	10	10	20
		% of Total	25.0%	25.0%	50.0%
Total		Count	20	20	40
		% of Total	50.0%	50.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.000[b]	1	1.000		
Continuity Correction[a]	.000	1	1.000		
Likelihood Ratio	.000	1	1.000		
Fisher's Exact Test				1.000	.624
Linear-by-Linear Association	.000	1	1.000		
N of Valid Cases	40				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.00.

1998

Return 1998 * Size of company 1998 Crosstabulation

			Size of company 1998		
			small	big	Total
Return 1998	Low	Count	12	8	20
		% of Total	30.0%	20.0%	50.0%
	high	Count	8	12	20
		% of Total	20.0%	30.0%	50.0%
Total		Count	20	20	40
		% of Total	50.0%	50.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.600[b]	1	.206		
Continuity Correction[a]	.900	1	.343		
Likelihood Ratio	1.611	1	.204		
Fisher's Exact Test				.343	.172
Linear-by-Linear Association	1.560	1	.212		
N of Valid Cases	40				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.00.

1999

Return 1999 * Size of company 1999 Crosstabulation

			Size of company 1999		
			small	big	Total
Return 1999	Low	Count	12	8	20
		% of Total	30.0%	20.0%	50.0%
	high	Count	8	12	20
		% of Total	20.0%	30.0%	50.0%
Total		Count	20	20	40
		% of Total	50.0%	50.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.600[b]	1	.206		
Continuity Correction[a]	.900	1	.343		
Likelihood Ratio	1.611	1	.204		
Fisher's Exact Test				.343	.172
Linear-by-Linear Association	1.560	1	.212		
N of Valid Cases	40				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.00.

2000

Return 2000 * Size of company 2000 Crosstabulation

			Size of company 2000		
			small	big	Total
Return 2000	Low	Count	10	10	20
		% of Total	25.0%	25.0%	50.0%
	high	Count	10	10	20
		% of Total	25.0%	25.0%	50.0%
Total		Count	20	20	40
		% of Total	50.0%	50.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.000[b]	1	1.000		
Continuity Correction[a]	.000	1	1.000		
Likelihood Ratio	.000	1	1.000		
Fisher's Exact Test				1.000	.624
Linear-by-Linear Association	.000	1	1.000		
N of Valid Cases	40				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.00.

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