THE RELATIONSHIP BETWEEN PRICE TO BOOK VALUE RATIO AND FINANCIAL STATEMENT VARIABLES – AN EMPIRICAL STUDY OF COMPANIES QUOTED AT THE NAIROBI STOCK EXCHANGE.

THE RELATIONSHIP BETWEEN PRICE TO BOOK VALUE RATIO AND FINANCIAL STATEMENT VARIABLES – AN EMPIRICAL STUDY OF COMPANIES QUOTED AT THE NAIROBI STOCK EXCHANGE.

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A MANAGEMENT RESEARCH PROJECT SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE MASTER OF BUSINESS ADMINISTRATION DEGREE – UNIVERSITY OF NAIROBI, FACULTY OF COMMERCE, DEPARTMENT OF ACCOUNTING.

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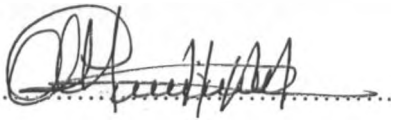
DECLARATION

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

Signed  Date 19/11/2004

KENNETH MURITHI MARANGU

This research project has been submitted for examination with my approval as supervisor.

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DEDICATION

To my parents Mr. and Mrs. Marangu and my sisters Cathy and Fridah. May this study be an inspiration to you to strive for even greater heights.

ACKNOWLEDGEMENT

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To you all, I say, God bless.

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ABSTRACT

The study set out to establish the relationship between price to book value ratio and dividend payout ratio, return on total assets, return on equity, return per share, dividend per share and growth rate of earnings after tax for companies quoted at the Nairobi Stock Exchange.

This is because not much is known about the factors that impact on this ratio since most of the studies on the price to book value ratio were carried out in developed markets and their applicability in developing markets like the Nairobi Stock Exchange has not been empirically tested.

The companies that comprise the Nairobi Stock Exchange 20 share index were used to predict price book value ratio. Information gathered was summarized and multiple linear regression was used to estimate price book value ratios. Price book value was the dependent variable and proxies for dividend payout ratio, return on total assets, return on equity, return per share, dividend per share and growth rate of earnings after tax earnings formed the independent variables.

This study has established a statistically significant relationship between price book value ratio and dividend payout ratio, return on total assets, return on equity, return per share, dividend per share and growth rate of earnings after tax for the period 1991 to 2003 for companies that constitute the Nairobi Stock Exchange 20 share index.

1.0 CHAPTER ONE - INTRODUCTION

1.1 Background

Financial analysis is the evaluation of a firm's past, present and anticipated future financial performance and financial condition. Its objectives are to identify the firm's financial strengths and weaknesses and to provide the essential foundation for financial decision making and planning. Ratio analysis is a powerful tool of financial analysis. Aimling (1978).

In financial analysis, a ratio is used as a benchmark for evaluating the financial position and performance of a firm. The absolute accounting figures reported in the financial statements do not provide a meaningful understanding of the performance and financial position of a firm. An accounting figure conveys meaning when it is related to some other relevant information. Financial ratios help to summarize large quantities of financial data and to make qualitative judgment about a firm's financial performance. Walsh (1996).

Investors value assets based on the earnings they anticipate from those investments. They have expectations on the value of their investment that enables them to make decisions on whether to buy, sell or hold particular shares. The objective of the investors is mainly to maximize returns on their investments while minimizing risk. Reily and Brown (1997).

Common stocks or ordinary shares are a very popular form of investment used by very many investors worldwide. They are popular because they offer investors the opportunity to tailor their investment programs to meet individual

needs and preferences. Given the size and diversity of the stock market, it is safe to say that no matter what the investment objectives are, common stocks fit the bill. For people living off their investment holdings, stocks provide a way of earning a steady stream of current income from the dividends they produce. Archer and Racette (1993).

For investors less concerned about current income, common stocks can serve as a basis for long term accumulation of wealth. With this strategy, stocks are used very much like a savings account. Gitman and Joehnk (2002), state that investors buy stocks for the long term as a way to earn not only dividends but also a steady flow of capital gains. Investors recognize that stocks have a tendency to go up or down in price over time and hence they need to have some screening device to help them position themselves to take advantage of this fact.

When money managers and investors want to invest their funds, they will look for those stocks which have superior investment performance. They can screen these stocks on the basis of variables such as price to book value ratio, price earnings ratio, dividend yield, market capitalization and earning momentum Senchack and Martin (1987). According to Pandey (2000), of these, the price book value ratio is a widely used method of determining the value of common stocks by investors.

The market value of an asset reflects its earning power of expected cash flows. 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 decreased significantly since its acquisition.

In financial literature, a variety of strategies and techniques are advanced as useful in selecting securities. Investors employ strategies based on price changes of the security. These strategies include value stocks, growth stocks, price momentum, price strength and bottom fishing. In all, investors and their advisors spend a lot of time identifying mis - priced securities because of the fact that investors prefer to buy securities / stocks at a fraction of what they are worth and then wait for the market to fully recognize the hidden value.

Price to book value ratio, which captures the relationship between the balance sheet value of ordinary shares and their market value, is very popular with investors. The price to book value ratio gives the final and perhaps the most thorough assessment by the stock market of a company's overall status (Walsh 1996). The price to book value ratio summarizes the investor's view of the company, its management, its profit, its liquidity and future prospects (Reily and Brown 1997). What most investors know is how to calculate price to book value ratio. However, the calculations do not identify factors that derive the ratio.

1.2 Statement of the Problem

Given the relationship between price book value ratios and returns on equity, it is not surprising to see firms that have high returns on equity selling for well above book value and firms that have low returns on equity selling at or below book value. The firms that should draw attention from investors are those that provide mismatches of price book value ratios and returns on equity – low price book value ratios and high returns on equity or high price book value ratio and low return on equity.

The relationship between price and book value attracts the attention of investors. Stocks selling for well above the book value of equity have generally been considered good candidates for undervalued portfolios, while those selling for more than book value have been targets for overvalued portfolios (Damodaran 1996). This requires that stocks with low price book value ratios should outperform high price book value ratio stocks. While some investors have used low price to book value ratios as a screen to pick undervalued stocks, others combine price to book value ratio with its fundamentals to make the same judgment. The persistence of higher returns earned by low price to book value stocks is viewed by many investors as an indication that price to book value ratio is a proxy for equity risk.

Price to book value ratio is a widely cited ratio by investment advisers in Kenya. The reasonable assumption is that investors use it in selecting assets (stocks) to invest in. Although several studies have established a relationship between low price book value ratios and excess returns, Fama and French (1992) point out that low price book value ratios may operate as a measure of risk, since firms with prices well below book value are more likely to be in trouble and go out of business. A stock with a low price to book value ratio is considered to be a good potential investment. In combination with the price earnings ratio and other analysis, the price to book value ratio can help to identify bargains and help investors understand whether they are getting good value in buying a share and avoid over priced stocks. For value investors, the price to book value ratio remains a tried and tested method for finding low price stocks that the market has neglected. The excess returns earned by firms with low price to book value ratios have been exploited by investors who use price book value as a screen. Ben Graham (2001), for instance, in his classic on security analysis, listed price being

less than two thirds of book value as one of the criteria to be used to pick stocks. Price to book value ratio offers an easy to use tool for identifying clearly under or over valued stocks. For this reason, the determinants of the price to book value ratio will always attract the attention of investors.

Most of the studies on the price to book value ratio were carried out in developed markets and their applicability in developing markets like the Nairobi Stock Exchange have not been empirically tested. Developing markets have different characteristics in terms of asset liquidity, volatility of returns, size, activity, market concentration and risk among others. Jahnke (1975) and Bruno Solnik (1997) point out that the financial analyst is often struck by different markets which have not only different legal and physical organizations but also different transaction costs, accounting methods and psychology. However, not much is known about factors that impact on the price book value ratio at the Nairobi Stock Exchange. For the above reasons, this study therefore seeks to establish the factors that drive the price to book value ratio at the Nairobi Stock Exchange.

1.3 Objective of the Study

Specifically, this study aims to establish the relationship between price to book value ratio and dividend payout ratio, return on total assets, return on equity, return per share, dividend per share and growth rate of earnings after tax for companies quoted at the Nairobi Stock Exchange. There has never been an investigation linking the firm's price to book value ratio with dividend payout ratio, return on total assets, return on equity, return per share, dividend per share and growth rate of earnings after tax at the Nairobi Stock Exchange.

This study will therefore go a long way in providing empirical evidence on this relationship.

$$PBV = b_0 + b_1 DPR + b_2 ROTA + b_3 ROE + b_4 RPS + b_5 DPS + b_6 GREarn$$

Where:

b_0 = Constant co –efficient;

DPR = Dividend payout ratio;

ROTA = Return on total assets;

ROE = Return on equity;

RPS = Return per share;

DPS = Dividend per share;

GREarn = Growth rate of earnings after tax.

1.4 Importance of the Study

This study is considered to be important to the following groups.

Investment Analysts

This study should be of use to security analysts, stockbrokers and other related parties whose knowledge on the relationship between price book value ratio and dividend payout ratio, return on total assets, return on equity, return per share, dividend per share and growth rate of earnings after tax is an important input in to investment analysis.

Academicians and researchers

This study will open doors for further research and will lead to further improvements in this field of finance as well as act as a point of reference for both academicians and researchers since it will provide further insight into the characteristics of the Nairobi Stock Exchange.

Investors

This study will enable investors to use the price book value ratio criterion as an investment screen to determine the stocks to invest in.

2.0 CHAPTER TWO - LITERATURE REVIEW

2.1 Price Book Value Ratio

The relationship between the market price of a stock and its book value per share can be used as a relative measure of valuation because, under theoretically ideal conditions. The market value of a firm should reflect its book value.

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. It is the original price paid for the assets reduced by any allowable depreciation on the assets. Consequently, the book value of an asset decreases as it ages. The book value of liabilities similarly reflects the "at issue" value of liabilities. Book value is the value of a company's assets minus its liabilities. In a perfect world, book value would be the value of the company if it were liquidated. When the share price of a company is low in relation to its liquidation value, the company is a real bargain. In theory, if only this were true, one could sweep up companies trading at a fraction of their real value and sell them when the stock price inevitably rose. Brealey and Myers (1993).

Assets are usually listed on a company's balance sheet at the price the company paid for them, and this amount is depreciated over a period of time. Often, this amount has no relation to the fair market value of those assets and a number of investors find book value to be a very unreliable indicator of the value of a company.

However, one can argue that for many large companies, a low price-to-book ratio is an indication that the company is undervalued relative to other similarly sized companies. Lofthouse (1996).

The price book value ratio provides a relatively stable, intuitive measure of value, which can be compared to the market price. Given reasonably consistent accounting standards across firms, price-book value ratios can be compared across similar firms for signs of under or over valuation. Even firms with negative earnings, which cannot be valued using price to earnings ratios, can be evaluated using price-book value ratios. The price book value ratio can be related to the same fundamentals that determine value in discounted cash flow models – the dividend discount model. Gitman and Joehnk (1998).

2.2 Price Book Value Ratio of a Stable Firm

A stable firm is a firm growing at a rate comparable or lower than the nominal growth rate in the economy in which it operates. Using the Gordon growth model, the value of equity for a stable firm can be written as.

$$P_o = \frac{DPS_1}{r - g_n}$$

Where:

P_o = value of equity

DPS_1 = expected dividends per share next year

r = required rate of return on equity

g_n = growth rate in dividends (forever)

Substituting EPS_0 [Payout ratio $(1+g_n)$] for DPS_1, the value of equity can be written as:

$$P_n = \frac{EPS_o \times \text{Payout ratio} \times (1+g_n)}{r - g_n}$$

Defining the return on equity as EPS_o/ Book value of equity, the value of equity can be written as:

$$P_o = BVo \frac{\times ROE \times \text{payout ratio} \times (1 + g_n)}{r - g_n}$$

Re writing the terms of the PBV ratio:

$$\frac{P_o}{BVo} = PBV = \frac{ROE \times \text{payout ratio} \times (1 + g_n)}{r - g_n}$$

If the return on equity is based upon expected earnings in the next period, this can be simplified to:

$$\frac{P_o}{BV_o} = PBV = \frac{ROE \times \text{payout ratio}}{r - g_n}$$

The price book value ratio is an increasing function of the return on equity, the payout ratio and the growth rate and a decreasing function of the riskiness of the firm. This formulation can be simplified further by relating growth to return on equity.

$g = ROE\ (1 - \text{payout ratio})$

Substituting back into the PBV equation;

$$\frac{P_o}{BV_o} = PBV = \frac{ROE - g_n}{r - g_n}$$

The price book value ratio of a stable firm is determined by the differential between the return on equity and its cost of capital. If the return on equity exceeds the cost of equity, the price will exceed the book value of equity; if the return on equity is lower than the cost of equity, the price will be lower than the book value of equity. The advantage of this formulation is that it can be used to estimate price to book value ratios for private firms that do not pay out dividends. Aimling (1978).

2.3 Price Book Value Ratio of a High Growth Firm

The price to book value ratio for a high growth firm can also be related to fundamentals. In the special case of the two stage dividend discount model, this relationship can be made explicit simply.

The value of equity of a high growth firm in the two - stage dividend discount model can be written as:

Value of equity = present value of expected dividends + present value of terminal price.

When the growth rate is assumed to be constant after the initial high growth phase, the dividend discount model can be written as follows:

$$P_o = \frac{EPS_o \times \text{payout ratio} \times (1+g) \times \left[1 - \frac{(1+g)^n}{(1+r)^n}\right]}{r-g} + \frac{EPS_o \times \text{payout ratio}_n \times (1+g)^n (1-g)^n}{(r_n - g_n)(1+r)^n}$$

Where:

g = growth rate in the first n years.

r = required return on equity in the first n years.

Payout ratio = payout in the first n years.

g_n = growth rate after n years forever (stable growth rate)

Payout ration = payout ratio after n years (stable growth rate)

r_n = required return on equity after n years

Substituting BVo x ROE for EPSo and re - arranging one gets:

$$\frac{P_o}{BV_o} = PBV = ROE \times \left[\frac{\text{Payout ratio } (1+g) \left[1 - \frac{(1+g)^n}{(1+r)^n} \right]}{r - g} + \frac{\text{payout ratio}_n (1-g)^n (1+g_n)}{(r_n - g_n)(1+r)^n} \right]$$

This formula is general enough to be applied to any firm, even one that is not paying dividends right now. The fundamentals that determine the price to book value ratio for a high growth firm are the same as the ones for the stable growth firm. Aimling (1978).

2.4 Price Book Value Ratio and Return on Equity

The ratio of price to book value is strongly influenced by the return on equity. A low return on equity affects the price book value by lowering the expected growth or payout. A simple way of relating the return on equity to growth is the following.

Expected growth rate = retention ratio x return on equity

The price book value ratio is also influenced by the required rate of return, with higher required rates of return leading to lower price book value ratios. If the firm's return on equity drops, the price to book value will reflect the drop. The lower return on equity will also lower expected growth in the initial high growth period. The influence of the return on equity and the cost of equity can be consolidated in one measure by taking the difference between the two – a measure of excess equity return. The larger the return on equity relative to the cost of equity, the greater is the price to book value ratio. Ellis and Williams (1996).

The drop in the return on equity has a two-layered impact. First, it lowers the growth rate in earnings and / or the expected payout ratio, thus having an indirect effect on the price to book value ratio. Second, it reduces the price to book value ratio directly.

2.5 Limitations of Price Book Value Ratio

Besides the fact that price book value is only valid in certain circumstances, there are also a number of pitfalls in price/book value analysis. Book value is an accounting figure. The guidelines for determining book value are governed by accounting conventions that change over time. Book value can be twisted and prodded into many different numbers depending on how the books of account are prepared. Copeland and Weston (1998).

Book values are affected by accounting decisions on depreciation and other variables. When accounting standards vary widely across firms, the price book value ratios may not be comparable across firms. Elton and Grober (1981).

The results are that we have even more difficulty in knowing whether we are comparing the same figures or apples to oranges, Balvers et al (1998). Book value may not carry much meaning for service firms, which do not have significant fixed assets. The book value of equity can become negative if a firm has a sustainable string of negative earnings reports, leading to a negative price book value ratio. Pandey (1990) acknowledges that there is a big problem in valuing loss making companies. Obviously, a negative price book value is an inconsistent situation because it is like saying that the investment is worth a negative amount equivalent to the price book value ratio which doesn't make sense.

2.6 Empirical Literature

Several studies have established a relationship between price book value ratios and excess returns. Rosenberg, Reid and Lanstein (1985) found out that the average returns on U.S stocks are positively related to the ratio of a firm's book value to the market value. Their study examined the preposition that stocks with low price book value ratios should outperform high price book value stocks and found out that those stocks with low price book value ratios experienced significantly higher risk adjusted rates of return than the average stock.

Fama and French (1992) analyzed the hypothesized positive relationship between beta and expected returns by examining the cross-section of expected stock returns between 1963 and 1990 and concluded that the positive relationship found in empirical studies before 1969 disappeared between 1963 and 1990. In contrast, the negative relationship between size and average return was significant by itself after the inclusion of other variables. They established that a positive relationship between book value to market value ratio and average

returns persists in both the univariate and multivariate tests, and is even stronger than the size effect in explaining returns. When they classified firms on the basis of book value to price ratios into twelve portfolios, firms with higher price book value ratios earned an average monthly return of 0.30 percent while firms with lowest price book value ratios earned an average monthly return of 1.83 percent for the 1963 - 1990 periods. Average monthly returns on the portfolios formed on size and book to market equity for the period July 1963 to December 1990 are as shown below.

Book to market portfolios

	All	Low	2	3	4	5	6	7	8	9	High
All	1.23	0.64	0.98	1.06	1.17	1.24	1.26	1.39	1.40	1.50	1.63
Small - ME	1.47	0.70	1.14	1.20	1.43	1.56	1.51	1.70	1.71	1.82	1.92
ME - 2	1.22	0.43	1.05	0.96	1.19	1.33	1.19	1.58	1.28	1.43	1.79
ME - 3	1.22	0.56	0.88	1.23	0.95	1.36	1.30	1.30	1.40	1.54	1.60
ME - 4	1.19	0.39	0.72	1.06	1.36	1.13	1.21	1.34	1.59	1.51	1.47
ME - 5	1.24	0.88	0.65	1.08	1.47	1.13	1.43	1.44	1.26	1.52	1.49
ME - 6	1.15	0.70	0.98	1.14	1.23	0.94	1.27	1.19	1.19	1.24	1.50
ME - 7	1.07	0.95	1.00	0.99	0.83	0.99	1.13	0.99	1.16	1.10	1.47
ME - 8	1.08	0.66	1.13	0.91	0.95	0.99	1.01	1.15	1.05	1.29	1.55
ME - 9	0.95	0.44	0.89	0.92	1.00	1.05	0.93	0.82	1.11	1.04	1.22
Large - ME	0.89	0.93	0.88	0.84	0.71	0.79	0.83	0.81	0.96	0.97	1.18

In June of each year (t) the NYSE, AMEX and NASDAQ stocks that meet the CRSP – COMPUSTAT data requirements were allocated to 10 size portfolios using the NYSE size market equity breakpoints. The NYSE, AMEX and NASDAQ stocks in each size decile were then sorted into 10 book equity – market equity portfolios using the book to market ratios for year (t-1).

The all column shows average returns for equal weighted size decile portfolios. The all row shows average returns for equal weighted portfolios of the stocks in each book equity to market equity group. The results of the table demonstrate the significance of both size and the book value to market value ratio and show the separate and combined effect of the two variables. As shown, controlling for size, book value to market value captures strong variation in average returns (0.70% to 1.92%). Alternatively, controlling for the book value to market value ratio leaves a size effect in average returns (if an investor has a high book value to market value portfolio, he can increase his return fro 1.18 to 1.92 by moving from large market equity to small market equity).

Given the results of the Fama - French study, which cast doubt on the capital asset pricing model and the use of beta as well as the significant support for the book value to market value ratio as an indicator of returns, several studies of these results followed. The studies focused on whether beta was really dead where no relationships existed between beta and rates of return and why and how does the book value to market value ratio help predict rates of returns.

Capaul, Rowel and Sharpe (1993) examined the comparative investment returns of low price to book value stocks ("value stocks") and high price book value stocks ("growth stocks") in France, Germany, Switzerland, the United Kingdom, Japan and the United States. Each six months, the stocks which comprised a major index in each country were ranked on the ratio of price to book value. The Standard and Poor's 500 Index was used for the United States and Morgan Stanley Capital International indexes were used for the other countries.

Within each country, the highest price to book value stocks whose total market capitalizations accounted for 50% of the entire market capitalization of the particular country's index were defined as the growth stock portfolio. The lower price to book value stocks which, in aggregate, accounted for the remaining 50% of the entire market capitalization of the index were defined as the value portfolio. The monthly return for each of the two portfolios was the market capitalization weighted average of the total returns of the underlying stocks.

The extra investment returns from value stocks as compared to growth stocks in each country over the period between January 1981 and June 1992 were as follows:

Country	**Cumulative extra return from value stocks**
France	73.7%
Germany	17.7%
Switzerland	42.7%
United Kingdom	31.5%
Japan	69.5%
United states	15.6%

They concluded that value stocks outperformed growth stocks on average in each country during the period studied, both absolutely, and after adjustment for risk.

Harris and Marston (1993) showed that the price book value ratio is positively impacted by future growth prospects and risk factors similar to the price earnings ratio. The appropriate risk measure to be used was beta.

Fairfield (1994) examined the characteristics and usefulness of the price book value ratio by using accounting information to show that the price book value ratio is a function of the expected level of profitability on book value, which is known to be related to return on equity. This implies that the price book value ratio is likewise impacted by growth expectations. Fairfield's valuation model illustrates in accounting terms that the price book value ratio depends on the expected level of future profitability, while the price earnings ratio depends on the expected changes in future profitability. The evidence indicated that the price book value ratio was related to future return on equity and was more stable than the price earnings ratio since high price book value ratio firms generally maintained their classifications.

Fama and French (1992) provided even greater support for the price book value ratio as a useful measure of relative value. The purpose of their study was to examine alternative variables that would explain the cross-section of rates of return on common stocks. One of the explanatory variables was the beta co-efficient. Their results did not provide much support for beta as an explanatory variable, but the results indicated that both size of the firms and the price book value of equity were significant explanatory variables. Moreover, they contended that the price book value ratio was the single best variable.

Shefrin and Statman (1995) contend that "the fortune survey" shows that the respondents believe that good companies are large companies with high price book values and they also believe that the stocks of these companies are good stocks. However, the survey results were inconsistent with empirical results, which show that stocks with high price book value ratios are not good stocks in terms of risk-adjusted rates of return.

Wilcox (1984) poised a strong linear relationship between price book value ratio (plotted on a logarithmic scale) and return on equity. He found that his regression had much smaller mean squared error than competing models using price earnings ratios and or growth rates. Using data from 1981 for 949 value line stocks, he arrived at the following equation.

Log (PBV) = - 1.00 + 7.51 (Return on Equity)

Todd Beard (2001) used the low price book value ratio strategy between 1986 and 2000 using twelve portfolios and found out that low price book value stocks Out performed the S & P 500 index. Low price book value portfolios beat the market. More importantly, the low price book value ratio showed a low correlation with other strategies that were used. That low correlation means that the low price book value strategy will tend to do well when the other strategies are having a hard time.

Alan Levine (1999) tested the low price book value ratio strategy on data from 1986 to 1999 such that there was virtually no out of the sample data for additional support. His study indicates that stocks with a low ratio of price to book value outperformed the market returning twenty eight percent in the year 2000 compared to returns of negative nine percent for the S & P 500 index.

As a follow up to their earlier study, Fama and French (1995) examined whether the behaviour of stock prices to size and the book value to market value ratio reflected changes in earnings. The analysis centered on the relationship of high and low book value to market value stocks and profitability, which was measured as earnings to book equity (return on equity).

Notably, low book value to market value stocks (growth stocks) tended to have high return on equity in the years prior to forming portfolios, but lower return on equity in subsequent years. In contrast, high book value to market value stocks (value stocks) experienced low return on equity prior to the portfolio formation but return on equity increased after the formation. The book value/market value ratios were persistent, which is consistent with Fairfield. Size played an important role in the small stock portfolios, while the market value to book value ratio was more important for firms with high book value/market value ratios (value stocks).

Todd Beard (2001) contends that the low price book value ratio strategy is a growth and momentum oriented strategy. If an investor's goal over the long run is to get market beating returns with low volatility, the low price book value strategy is not the single best strategy to use. He suggested that investors should use multiple strategies that are not strongly correlated so that if one strategy has a bad year, hopefully one or more of the other strategies will take up the slack. To really do that, investors need more investment strategies, which are not growth and momentum oriented.

The COMPUSTAT database was used to extract information on price book value ratios, return on equity, payout ratios and earnings growth rates from 1987 to 1991 for all NYSE and AMEX firms with data available each year. The betas were obtained from the CRSP tape for each year. All firms with negative book values were eliminated from the sample. The regression of price book value ratio on the independent variables yielded the following for each year.

YEAR	REGRESSION
1987	PBV=0.1841+0.002 PR – 0.394BETA+1.3389 EGR + 9.35 ROE
1988	PBV=0.7113+0.00007 PR – 0.5082 BETA + 4.605 EGR + 6.9874 ROE
1989	PBV=0.4119 + 0.0063 PR – 0.6406 BETA + 1.0038 EGR + 9.55 ROE
1990	PBV=0.8124 + 0.0099 PR – 0.1857 BETA + 1.1130 EGR + 6.61 ROE
1991	PBV = 1.1065 + 0.3505 PR – 0.6471 BETA + 1.0087 EGR + 10.51 ROE

Where:

PR = Dividend payout ratio;

BETA = Stock beta;

EGR = Growth rate of earnings;

ROE = Return on equity.

Commentators such as Baruch Lev (Barron's, Nov. 20, 2000) argue that book value of common equity is a poor measure of a firm's net assets. Other writers have extended this argument to conclude that the book to market ratio no longer has a place in investment analysis. In particular, strategies that use the book to market ratio to identify value stocks have come under attack.

Davis James (2001) examined the claim that the book to market ratio no longer contains any information that can be used to identify value stocks. He compared the book to market ratio to other measures that are frequently mentioned as more relevant alternatives. His results indicate that ranking firms on book to market remains a valid way of identifying value stocks and that the dispersion in annual returns that is produced by a book to market sort is greater than that

produced by three alternative measures for the July 1963 – June 2000 period. He concluded that there is no evidence of book to market becoming irrelevant for identifying value stocks. Since book value is a "stock" variable, while earnings, cash flow and sales are "flow" variables, there is a tendency for book to market rankings to be somewhat more stable over time than the rankings based on the other three variables. So, in addition to providing at least as much dispersion as its competitors, book to market may also reduce the number of transactions that are triggered by stocks moving in and out of the portfolios buy range. This can be especially important for taxable investors.

Louis, Hamao and Josef (1996) related the cross sectional differences in returns of Japanese companies to four variables namely earnings yield, size, book to market ratio and cash flow yield. Their analysis was conducted at the portfolio level and employed the Seemingly Unrelated Regression (SUR) model to adjust simultaneously for portfolio risk and test for the significance of the fundamental variables. As an alternative to the SUR methodology, they also applied the Fama – Macbeth (1973) methodology. The SUR methodology assumes that the betas are constant over time whereas the Fama – Macbeth procedure updates betas periodically. Their findings revealed a significant cross sectional relationship between the fundamental variables that they considered and expected returns in the Japanese market. The performance of the book to market ratio was especially noteworthy.

Charitou and Constantinidis (2004) conducted a study and examined empirically the Fama and French three factor model of stock returns using Japanese data over the period 1992 – 2001. Specifically, they examined whether the behaviour of stock prices, in relation to size (market equity) and book to market equity,

reflects the behaviour of earnings, using earnings to book – market equity as a measure of profitability. They also examined whether stock prices forecast the reversion of earnings growth observed after firms are ranked on size and book – market equity, using earnings to market equity as growth measure. The major objective of their study was to provide evidence that would contribute to the effort of explaining the three factor model in a country that differs substantially from the US not only with regard to its financial reporting system but also as it relates to its economic characteristics. Their findings revealed a significant relationship between market, size and book – market equity factors and expected stock returns in the Japanese market. They also found out that book – market equity is a strong indicator of profitability when measured by earnings to book – market equity for all stocks except in the case of small low book – market equity stocks which is consistent with rational pricing. Big low book – market equity stocks signal strong earnings and high book – market equity stocks signal persistent poor earnings. They found evidence that there is a size factor in fundamentals that leads to a size related risk factor in returns and there is a book – market equity factor in fundamentals that leads to a book – market equity related risk factor in returns.

Kothari, Shanken and Sloan (1997) studied the relationship between price to book value ratio and returns of common stocks. Their argument was that the relationship between the two variables was periodic and not significant over long periods of time. This is based on the fact that they used measured beta and annual returns to avoid problems associated with monthly data. They concluded that there was substantial compensation for beta risk hence no relationship between price to book ratio and returns.

Fama and French (1992) document a significant relationship between firm sizes, book to market ratios and security returns for non financial firms. Barber and Lyon (1997) extended these results to financial firms. Gatchev Vladimir (1999) used the same techniques to analyze these relations for both financial and non financial companies in the years 1980 – 1998. This gave him 8 years of more recent data that is unaffected by the bias in the COMPUSTAT data before 1979. He concluded that the relation between book to market ratios and security returns is similar for both non financial and financial firms. However, he could not be able to conclude whether size has the same effect on the returns of financial and non financial firms.

Reliy and Brown (1997) summarize that the tests of publicly available ratios that can be used to predict the cross section of expected returns for stocks have provided substantial evidence in conflict with the semi strong form efficient market hypothesis. Significant results were found for price earnings ratio, market value size, neglected firms, leverage and book value to market value ratio. While recent work has indicated that the optimal combination appears to be size and the book value to market value ratio, the results of studies by Jensen, Johnson and Mercer (1996) indicate that this combination of variables only works during periods of expansive monetary policy.

A valuation methodology espoused by Benjamin Graham and used by Warren Buffet is to buy shares of fundamentally strong companies that are trading at low multiples of book value. The rationale being that the market capitalization is at or below the underlying enterprise value of the company. In other words, the stock is priced at a level below what it would reasonably cost somebody else to create a similar ongoing concern.

3.0 CHAPTER THREE - METHODOLOGY

3.1 Research Design

A survey of the quoted companies which make up the Nairobi 20 share index will be carried out for the period between 1991 and 2003.

3.2 The Population of the Study

The total population will consist of all the fifty-two companies listed at the Nairobi Stock Exchange. However, all companies with negative book values will be eliminated from the total population.

3.3 The Sample Size

The sample will consist of quoted companies that constitute the Nairobi Stock Exchange 20 share price index.

3.4 Data Collection

The data used in this study is secondary data obtained from the Nairobi Stock Exchange and audited financial statements of all listed companies. They will be in the form of annual capitalized reports and weekly share prices for the period of thirteen years covered under the study. To come up with valid empirical evidence on the factors that drive the price to book value ratio, the following variables will be obtained.

- Return on equity ;
- Growth rate of earnings;
- Dividends payout ratios;

- Geometric average returns of stocks;
- Dividends per share;
- Earnings per share;
- Return on total assets.

Return on equity for common stock will be calculated as:

$$ROE = \frac{\text{Earnings attributable to equity holders}}{\text{Net worth}}$$

Growth rate of earnings will be calculated as:

$$G = ROE\ (1 - \text{payout ratio})$$

Dividend payout ratio will be calculated as:

$$DPR = \frac{DPS}{EPS}$$

Geometric average returns for stocks during the period will be calculated as:

$$G.A.R = \sqrt{(1 + R_1)(1 + R_2)(1 + R_3) \text{ ---- } (1 + R_n)} - 1$$

Dividend per share will be calculated as:

$$DPS = \frac{\text{Total common stock dividends}}{\text{Outstanding common shares}}$$

Earnings per share will be calculated as:

$$EPS = \frac{\text{Earnings attributable to common stockholders}}{\text{Outstanding common shares}}$$

Return on total assets will be calculated as:

ROTA = Earnings attributable to common stockholders

Total assets

3.5 Data Analysis

The companies that comprise the Nairobi Stock Exchange 20 share index will be used to predict price book value ratio. Information gathered will be summarized and multiple linear regression will be used to estimate price book value ratios. Price book value will be the dependent variable and proxies for dividend payout ratio, return on total assets, return on equity, return per share, dividend per share and growth rate of earnings after tax will form the independent variables. The multiple linear regression model will be expressed as:

$y = b_o + b_1x_1 + b_2x_2 + b_3x_3 + \text{---} + b_kx_k$

Where:

k = number of independent variables;

b_o = constant co – efficient;

$b_1 – b_k$ = co - efficients of the independent variables;

$x_1 – x_k$ = individual independent variables.

To evaluate the explanatory value of the model developed, an analysis of variance will be performed to test whether any of the independent variables has a relationship with the dependent variable using the following hypothesis.

$H_o : b_1 = b_2 = b_3 = 0$

H_1 : At least one b is not zero

If the null hypothesis is not rejected then there is no linear relationship between price book value ratio and any of the independent variables. If the null hypothesis is rejected, then at least one independent variable is linearly related to the price book value ratio.

To test for explanatory power, a computed F value will be compared to a critical F value read from the F distribution table at a desired confidence level of ninety five percent.

$$\text{Computed F value} = \frac{\text{Mean sum of squares}}{\text{Mean sum of error terms}} = \frac{K}{n-k-1}$$

If one of the independent variables has some relationship with the dependent variable, each co-efficient will be tested individually to determine which one (s) are significant. This procedure uses a t – distribution and tests the following hypothesis

$$H_o : b_1 = 0$$

$$H_1 : b_1 \neq 0$$

The t – test statistic is as follows:

$$t = \frac{b_1 - 0}{sb_1}$$

Where:

b_1 = individual co - efficient being tested

sb_1 = standard error of b_1

4.0 CHAPTER FOUR – FINDINGS AND INTERPRETATION

4.1 Introduction

This research was aimed at establishing the relationship between price to book value ratio and dividend payout ratio, return on total assets, return on equity, return per share, dividend per share and growth rate of earnings after tax for companies quoted at the Nairobi Stock Exchange.

The sample consists of twenty companies that constitute the Nairobi Stock Exchange share price index. However the observations for a full case are two hundred and sixty covering the period 1991 to 2003. For each company included in the study, each year's observations are included as the case. For example for return of assets, Bamburi Cement Limited presents thirteen cases for each variable - see appendix one.

Table 1 - Descriptive Statistics of Variables Used In the Study

Variable	N	N*	Mean	Median	StDev	Q1	Q3
BtM	242	18	2.748	1.307	4.771	0.681	2.496
DPR	244	16	54.19	52.32	52.12	30.8	73.66
ROTA	246	14	12.021	8.663	13.627	4.867	16.381
ROE	246	14	18.96	15.27	30.03	7.47	32.29
RPS	222	38	53.63	17.36	132.18	-8.58	80.38
DPS	246	14	2.475	1.45	2.76	0.706	3.337
GREarn	234	26	9.5	12.4	168.5	-25	56.3

KEY

N = Number of observations;

N* = Number of missing observations;

BtM = Market to book ratio;

DPR = Dividend payout ratio;

ROTA = Return on total assets;

ROE = Return on equity;

RPS = Returns per share;

DPS = Dividend per share;

GREarn = Growth in earnings after tax.

4.2 Market to Book Ratio

The assumption is this study is that there is a negative relationship between returns and price book value ratios. The years 1993 (4.59), 1994 (4.5), 1995 (3.34), 1999 (2.99) and 2003 (3.87) experienced wide differences between market price per share and book value per share for companies included in the sample – (see table 2).

Over the period of the study the average market to book ratios ranging from 2.0 to 4.8 compare favorably with similar ratios in developed economies U.S.A. (2.85), U.K. (3.10) and Japan (2.80).

On the basis of the book to market ratio, the sample data tells us that shareholders investment has increased in value terms. It is also evident that the shareholder value was at its lowest, in terms of low growth during the years 2000, 2001 and 2002. Seventy- five of the cases have a value of 2.496 and below.

Table 2 – Market to book ratios – 1991 to 2003

Year	N	N*	Mean	Median	StDev	Q1	Q3
1991	15	5	2.48	0.74	4.78	0.39	1.91
1992	16	4	2.17	0.95	3.86	0.34	2.08
1993	17	3	4.59	1.28	10.29	0.60	3.66
1994	18	2	4.50	2.98	5.17	1.30	5.95
1995	18	2	3.34	1.71	5.77	0.96	3.15
1996	20	0	2.24	1.30	3.62	0.74	2.31
1997	20	0	2.14	1.17	2.92	0.82	2.30
1998	20	0	2.48	1.27	4.28	0.90	2.31
1999	20	0	2.99	1.38	5.49	0.80	1.86
2000	20	0	1.99	1.23	2.24	0.65	2.38
2001	20	0	1.31	0.82	1.37	0.52	1.59
2002	19	1	1.98	0.82	2.65	0.43	2.07
2003	19	1	3.87	2.54	4.78	0.83	4.79
Mean			2.77	1.40	4.40	0.71	2.80
Standard Deviation			1.02	0.67	2.21	0.27	1.29

KEY
N = Number of observations;

N* = Number of missing observations.

The years 2000 and 2001 were the worst for this market. During this period the book to market ratio exhibited a median ratio that is below one (1). A market to book ratio value of less than one (1) means that the value of shareholders investment has diminished. That is, during these years investors believed that future profits will not be sufficient to justify current investment tied in their company - (See table 2).

At company level (see table 3), the median of this ratio is largely below one and relatively stable across firms in the sample. The stability of this ratio for individual companies is inferred from the standard deviation, which is largely around or below one (1) for a majority of the companies.

The companies with impressive growth prospects include Barclays Bank of Kenya Ltd, BOC Kenya Ltd, Firestone East Africa (1969) Ltd, Standard Chartered Bank Ltd, Uchumi and Total Kenya Ltd. These are largely blue chip companies. However, Total and BOC Kenya Ltd are more of outliers because the standard deviations of book to market ratios for these companies are large, well above the cut off point of one (above 1). BOC Kenya Ltd (6.07) and Total Kenya Ltd (9.94).

Table 3 – Descriptive statistics of market to book ratio of companies constituting the NSE 20 share index

Company	Code	N	N*	Mean	Median	StDev	Q1	Q3
BAMB	1	13	0	1.07	1.02	0.78	0.58	1.30
BAT	2	13	0	2.07	1.46	1.38	1.29	2.30
BBK	3	13	0	4.48	3.52	2.57	2.32	6.43
BBOND	4	13	0	1.79	1.30	1.43	1.09	1.98
BOC	5	13	0	4.92	1.82	6.07	0.97	7.10
DTK	6	13	0	2.11	1.84	1.38	1.16	2.72
EABL	7	13	0	0.67	0.75	0.23	0.48	0.83
FIRE	8	10	3	2.79	2.51	1.46	1.73	3.51
GWK	9	13	0	0.54	0.52	0.33	0.24	0.79
KAKUZI	10	13	0	0.83	0.80	0.39	0.45	1.14
KCB	11	13	0	0.93	0.86	0.44	0.62	1.20
KENAIR	12	8	5	0.57	0.50	0.15	0.47	0.67
KPLC	13	12	1	1.29	0.77	1.50	0.24	1.52
NIC	14	14	0	1.51	1.47	0.88	0.68	1.98
NMG	15	12	0	1.64	1.31	1.12	0.86	2.02
SASINI	16	13	0	0.96	0.64	1.20	0.39	1.02
SCBK	17	13	0	3.26	2.57	1.78	2.00	4.11
SERENA	18	6	7	0.81	0.75	0.20	0.66	1.03
UCHUMI	19	11	2	2.74	2.54	0.87	1.87	3.58
TOTAL	20	13	0	18.00	17.06	9.94	10.56	22.70

KEY

N = Number of observations;

N* = Number of missing observations.

For Sasini Tea and Coffee Ltd, Kenya Commercial Bank, Kakuzi Ltd and TPS (Serena) their market prices are very close to the book values, signifying no growth in these companies. The surprising result is East African Breweries Ltd with a price well below the book value over the period of the study. However this is being corrected. The share of this company has since jumped from an average of Kshs 60 per share four years ago to around Kshs 500 per share in 2004. In terms of stability in this ratio George Williamson Kenya Ltd, East African Breweries Ltd, Kenya Airways Ltd and TPS (Serena) are not exposed to the turbulences of the market.

4.3 Correlation between Market to Book Ratio and Independent Variables

Coefficients of correlation are relatively direct measures of relations. If no relation exists between independent variable and dependent variable, then it is as though we had sets of random numbers and consequently random means. In which case, the differences between means would only be chance fluctuations.

Table 4 – Correlation coefficients for BtM, DPR, ROTA, RPS, DPS and GREarn

	BtM	DPR	ROTA	ROE	RPS	DPS
DPR	0.045					
	0.489					
ROTA	0.245	0.108				
	0.000	0.091				
ROE	0.360	0.129	0.532			
	0.000	0.044	0.000			
RPS	0.168	0.010	0.283	0.171		
	0.013	0.877	0.000	0.011		
DPS	0.010	0.332	0.141	0.253	0.252	
	0.879	0.000	0.028	0.000	0.000	
GREarn	0.080	0.058	0.225	0.301	0.136	0.057
	0.227	0.378	0.001	0.000	0.046	0.382

Cell Contents: Pearson correlation and P - Values. Values less than 0.100 are significant at 10%

The correlation coefficient between book to market ratio (BtM) and dividend payout ratio (DPR) is 0.045 (See table 4). In other words after adjusting for linear effect of dividend payout ratio, its impact is 0.045. In addition the p-value of 0.489 indicates that there is no evidence that the correlation between market to book ratio and dividend payout ratio is different from zero.

For the correlations, the critical p - value is 0.10. Therefore the correlation between market to book ratio and the following variables are significant: return on total assets (ROTA), return on equity (ROE) and return per share (RPS). The highest correlation is between return on equity - 0.360 which measures accounts return to shareholders and book to market ratio.

There is also significant correlation between return on equity and return on assets i.e. the higher the returns generated from assets the higher the earnings available to the shareholders. The results should be interpreted taking into the fact that both return on assets and return on equity are derived from accounting numbers. Furthermore these are both accounting to earnings. The same conclusion applies to return per share (RPS) and return on total assets (ROTA) i.e. the correlation between book to market and return per share (RPS) and return on total assets (ROTA) are significant.

4.4 Linear Regression results

The hypothesis to be tested is reproduced below:

H_0: There is no relationship between market to book ratio and financial statement variables (DPR, ROTA, ROE, RPS, DPS and GREarn).

H_1: There is a relationship between market to Book rat and financial statement variables.

The study employs t - test to compute a confidence interval and perform a hypothesis test of the mean. The t - statistic is used to determine the statistical significance or insignificance of the regression co - efficient. This is used along with the p - value.

The p - value of the t - statistic indicates r – i.e. the probability of obtaining more extreme values of the test statistic by chance if the null hypothesis is true. The cut off p - value is 0.10 i.e. the probability of obtaining a more extreme value of the test statistic by chance if the null hypothesis is smaller than 0.10, which is a commonly chosen α – level. The f - value is important because it is a formula to test the significance of any multiple regression model.

4.5 Regression Results - Market to Book Ratio and All Predictor Variables

The objective of this study is to examine whether market to book ratio can be predicted by dividend payout-ratio, return on total assets, return on equity, return per share, dividend per share and growth rate in earnings. As mentioned previously, the t - statistics test the null hypothesis that each co - efficient is zero, given that all other variables are present in the model. (See table 5).

Table 5 – Regression results – Market to book ratio as dependent variable and variables contained in financial statements as independent variables

Predictor	Coef	SE Coef	T	P
Constant	1.439	0.549	2.620	0.009
DPR	0.005	0.007	0.630	0.526
ROTA	0.083	0.036	2.290	0.023
ROE	0.042	0.013	3.300	0.001
RPS	0.004	0.002	1.650	0.101
DPS	-0.300	0.127	-2.360	0.019
GREarn	-0.001	0.002	-0.670	0.504
S = 4.444	R-Sq = 15.1%	R-Sq(adj) = 12.6%		

Source	DF	SS	MS	F	P
Regression	6	725.26	120.88	6.12	0.000
Residual Error	207	4088.73	19.75		
Total	213	4813.99			

The results show that the t – test and the p - values of the following variables: ROTA (0.023), ROE (0.001), DPS (0.019) and on margin RPS (0.101) are less than the critical 0.10 and indicate that there is significant evidence that the coefficients for these prediction variables are not zero and therefore contain information.

The linear regression equation is as follows:

BtM = 1.439 + 0.005DPR + 0.083ROTA + 0.042ROE + 0.004RPS – 0.3DPS – 0.001GREarn

Except for dividend per share (DPS) and growth in a firm's earning after tax (GREarn), that both show a negative relationship, the other variables show positive relationship with market to book ratio. One would expect increases in dividend per share and dividend payout ratio to impact adversely on a firm's growth and specifically market to book ratio.

In summary the best predictor variables are return on total assets (0.0832), return on equity (0.04225), and dividend per share (0.019). The F - value (6.12) confirms that the results are statistically significant for the overall equation though the relationship between the predicted and predictor variables vary from one variable to another. The r - square of 15.1 percent (%) reflects the models predicted goodness of fit for the sample.

4.6 Regression Results - Market to Book Value ratio and Selected Variables – ROTA, ROE, RPS and DPS

When selected variables are used (selection on the basis of results in table 5), there is significant improvement in the overall explanatory power of the equation - from an F - value of 6.12 to 12.23 at a p - value of 0.000. In the total 221 cases used, 39 cases contain missing values.

Predictor	Coef	SE Coef	T	P
Constant	1.7596	0.4823	3.65	0.000
ROTA	0.04025	0.03255	1.24	0.218
ROE	0.05313	0.01165	4.56	0.000
RPS	0.004358	0.002423	1.80	0.073
DPS	-0.2274	0.1130	-2.01	0.045

S = 4.467 R-Sq = 16.0% R-Sq(adj) = 14.5%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	4	823.54	205.88	10.32	0.000
Residual Error	216	4310.48	19.96		
Total	220	5134.02			

The linear regression equation is as follows:

BtM = 1.76 + 0.0403 ROTA + 0.0531 ROE + 0.00436 RPS – 0.227 DPS

As expected, the dividend per share sign is negative. Furthermore the return on equity (ROE) is almost perfect in explaining variations in market to book ratio. The overall regression equation is descriptive (F – value of 10.32 and p - value 0.000).

5.0 CHAPTER FIVE – SUMMARY AND CONCLUSION

5.1 Introduction

This research was aimed at establishing the relationship between price to book value ratio and dividend payout ratio, return on total assets, return on equity, return per share, dividend per share and growth rate of earnings after tax for companies quoted at the Nairobi Stock Exchange.

In summary the study has established a statistically significant relationship between market to book ratio and dividend payout ratio, return on total assets, return on equity, return per share, dividend per share and growth rate of earnings after tax for the period 1991 to 2003 for companies that constitute the Nairobi Stock Exchange 20 share index.

The best predictor variables are return on assets, return on equity and dividend per share. This implies that managers of firms can control return on total assets, return on equity and dividend per share to influence the price to book value ratio of their firms. For investors, any adverse movements in return on total assets, return on equity and dividend per share will adversely affect the price to book value ratio thus affecting the value of their investment.

5.2 Limitations of the Study

- Due to time and financial constraints, the researcher only concentrated on companies that constitute the Nairobi Stock Exchange 20 share index.

- Lack of readily available daily data for the period of the study.

5.3 Suggestions for Further Research

- The period of study can be extended so as to be in a position to establish the long run relationship between price book value ratio and earnings growth rate, return on equity and dividend payout ratio.

- Researchers can take into consideration transaction costs when calculating the return on shares. Transaction costs for small firms tend to be higher than those for large firms.

- The sample size can be increased to include all companies listed at the Nairobi Stock Exchange.

- Beta can be introduced as one of the independent variables in the multiple linear regression model.

6.0 APPENDICES

6.1 Companies that Constitute the NSE 20 Share Index

Name of company	Code
Brooke Bond	BBOND
George Willamson	GWK
Kakuzi	KAKUZI
Sasini Tea and Coffee	SASINI
Uchumi Supermarkets	UCHUMI
Kenya Airways	KENAIR
Tourist Promotion Services (Serena)	SERENA
Nation Media Group	NMG
Barclays Bank	BBK
Diamond Trust Bank	DTK
Kenya Commercial Bank	KCB
Standard Chartered Bank	SCBK
British American Tobacco	BAT
Bamburi Cement	BAMB
B.O.C Gases	BOC
National Industrial Credit	NIC
East African Breweries	EABL
Firestone	FIREST
Kenya Power and Lighting	KPLC
Total	TOTAL

6.2 Book to Market Ratio and Financial Statement Variables

Company	Code	Year	BtM	DPR	ROTA	ROE	RPS	DPS	GREarn
Bamb1991	1	1991	0.190579	15.43881	11.47143	10.17113		0.055537	69.15301
Bamb1992	1	1992	0.115247	18.25426	14.39935	8.750253	76.94063	0.111074	62.97537
Bamb1993	1	1993	0.571243	22.40124	14.69366	9.440439	452.4074	0.222149	-42.8857
Bamb1994	1	1994	1.273569	64.85844	11.96444	5.136533	134.3747	0.360992	231.7023
Bamb1995	1	1995	0.582308	31.13582	16.85022	9.774086	15.82288	0.58314	12.46664
Bamb1996	1	1996	0.69153	51.23859	13.24892	7.617326	29.57432	1.082645	1.694915
Bamb1997	1	1997	1.240455	52.30769	12.93022	7.484168	91.66137	1.123967	-27.1795
Bamb1998	1	1998	1.240672	47.88732	5.022791	5.373445	1.37741	0.749311	26.05634
Bamb1999	1	1999	1.014993	57.46032	7.861573	7.188394	-24.3132	0.997245	-48.324
Bamb2000	1	2000	1.333117	94.11765	6.365135	3.96868	32.37833	0.749311	112.7027
Bamb2001	1	2001	0.893544	55.81395	10.47286	7.900813	-19.4883	1.123967	68.99619
Bamb2002	1	2002	1.595838	103.4202	14.01863	12.72727	84.75666	3.498623	-13.3083
Bamb2003	1	2003	3.188017	95.22024	11.99921	10.92373	118.442	2.798898	
BAT1991	2	1991	2.352102	85.7651	22.11038	27.4185		2.94375	30.00102
BAT1992	2	1992	1.828837	79.33123	26.16186	26.86177	36.8125	3.54375	100.8216
BAT1993	2	1993	2.256885	60.61359	36.87587	40.22963	59.5	5.4375	-45.7544
BAT1994	2	1994	5.068009	61.64924	18.04846	17.00233	214.4828	3	1.71652
BAT1995	2	1995	1.943295	75.7611	16.79849	14.66642	-58.0357	3.75	27.51724
BAT1996	2	1996	1.306668	71.29492	20.21214	17.90341	-22.4719	4.5	0.454386
BAT1997	2	1997	0.989075	70.97243	18.67099	17.11913	-11.1111	4.5	82.46445
BAT1998	2	1998	0.872125	48.62073	29.19039	28.29588	17	5.625	6.956783
BAT1999	2	1999	1.331343	63.64161	27.36033	28.27779	72.54902	7.875	-52.9084
BAT2000	2	2000	1.454815	135.5734	9.903513	13.67142	17.67742	7.9	3.672324
BAT2001	2	2001	1.30893	130.7711	14.0386	14.85883	-0.99174	7.9	116.9183
BAT2002	2	2002	1.269164	68.68011	19.89841	33.4568	11.53846	9	-13.0036
BAT2003	2	2003	4.93224	109.6471	26.4639	29.95467	303.0612	12.5	
BBK1991	3	1991	5.892702	57.14286	4.117229	32.26488		1.217477	51.52838
BBK1992	3	1992	4.819944	66	4.725483	42.11165	60.22727	2.106038	89.19308
BBK1993	3	1993	8.690979	56.13748	6.898564	61.99245	169.0365	3.367698	75.32369
BBK1994	3	1994	9.516509	43.17062	8.269753	77.37815	104.6576	4.73245	-7.90617
BBK1995	3	1995	6.95758	50.51887	7.165627	52.82173	1.221271	5.257732	16.83962
BBK1996	3	1996	3.521883	51.91764	7.328562	48.26578	-15.6391	6.313206	8.477998
BBK1997	3	1997	3.409825	57.42464	7.01773	42.66434	28.28126	7.574865	11.64868
BBK1998	3	1998	3.241645	56.56667	6.480046	39.89627	47.10934	8.330879	-24.8667
BBK1999	3	1999	2.564317	68.45608	4.813324	26.66351	-7.69231	7.574865	-8.252
BBK2000	3	2000	1.831344	89.55513	4.345989	23.3778	-1.2514	9.091802	42.89168

BBK2001	3	2001	1.661786	87.74958	5.880964	32.34811	11.80258	12.7295	-39.6616
BBK2002	3	2002	2.065225	124.6214	3.19627	19.60095	34.20768	10.9082	88.83904
BBK2003	3	2003	4.120848	84.70448	5.247331	36.86026	149.3101	14.00098	
Bond1991	4	1991	1.79838	85.85308	27.69388	28.96447		5.49999	38.81494
Bond1992	4	1992	2.167415	84.61551	33.83429	38.21991	46.34144	7.49999	112.5541
Bond1993	4	1993	6.288452	91.07446	30.78928	27.37999	1313.333	17	-55.3499
Bond1994	4	1994	2.277127	59.61355	9.42235	7.306831	-62.2069	5	-93.5667
Bond1995	4	1995	1.608645	97.77738	2.985105	0.464457	-28.9963	1	-148.997
Bond1996	4	1996	1.57296	59.10737	3.625811	-0.2331	-5.78947	2	-1643.56
Bond1997	4	1997	1.020542	0	6.324569	-4.25471	-37.8531	0	204.6287
Bond1998	4	1998	1.298739	85.10879	7.771795	4.53313	31.81818	4	-8.3147
Bond1999	4	1999	1.27707	90.57971	5.463233	4.732594	-23.4115	3.98977	106.9062
Bond2000	4	2000	1.148841	65.3134	10.29785	11.20207	-0.72115	6	-51.2075
Bond2001	4	2001	0.820011	0	4.714378	5.263967	-25.964	0	-37.5024
Bond2002	4	2002	0.656788	88.69886	3.455385	3.336916	-21.5278	2.50001	-52.3852
Bond2003	4	2003	1.29471	471.0541	1.457114	1.927572	50	6	
BOC1991	5	1991	0.391801	38.80739	12.25044	7.41814		0.874735	22.06494
BOC1992	5	1992	0.451839	53.69227	12.72581	8.582581	32	0.984077	48.00983
BOC1993	5	1993	0.632741	58.69402	12.34918	9.531447	142.1388	1.592215	30.61266
BOC1994	5	1994	2.054226	75.12359	14.96809	9.952202	245.1149	2.661764	12.41797
BOC1995	5	1995	1.818273	70.23389	14.74141	10.86157	-4.71187	2.797536	55.01267
BOC1996	5	1996	1.433453	54.25604	16.36811	14.94513	0.825561	3.349995	13.07006
BOC1997	5	1997	1.449676	47.98445	19.14496	14.80345	14.38461	3.349995	11.91358
BOC1998	5	1998	1.313577	44.7963	20.07153	15.28006	3.521134	3.500005	-4.78385
BOC1999	5	1999	14	47.71887	9.274573	25.5256	5.071416	3.549991	-48.5636
BOC2000	5	2000	6	92.77254	5.895824	76.53108	-52.0714	3.549991	0.44837
BOC2001	5	2001	6.2	92.35843	7.63246	76.87423	15.16664	3.549991	40.56096
BOC2002	5	2002	8	80.51493	10.60174	108.0551	43.0646	4.350026	44.6749
BOC2003	5	2003	20.2	55.65231	11.35071	156.3287	163.3751	4.350026	
DTB1991	6	1991	1.413214	40.80918	4.919391	19.99216		0.355552	32.24195
DTB1992	6	1992	2.495667	46.63654	4.833575	22.01339	110.6244	0.512	25.51899
DTB1993	6	1993	3.218252	31.24227	6.318767	28.11604	95.07692	0.597333	69.39733
DTB1994	6	1994	5.832473	35.40133	6.238127	29.49374	100.5645	0.896	30.68889
DTB1995	6	1995	2.948207	40.30191	5.379366	24.31196	-18.0368	1.152	10.72218
DTB1996	6	1996	1.435362	-69.5188	-1.46601	-11.0075	-54.2308	0.64	-152.888
DTB1997	6	1997	2.151003	30.12847	-3.9766	-32.2121	-2.82609	0.48	-127.208
DTB1998	6	1998	1.843399	30.78949	3.034183	23.57149	4.827586	0.64	161.7261
DTB1999	6	1999	1.816723	61.02241	2.497711	9.99006	21.81818	0.64	-49.544
DTB2000	6	2000	0.909424	29.16111	3.588638	13.85273	-43.8462	0.48	56.94466

DTB2001	6	2001	0.587328	77.68983	0.960878	3.352224	-32.8571	0.32	-74.9765
DTB2002	6	2002	0.650752	63.15789	1.911194	6.190848	17.77778	0.48	84.51334
DTB2003	6	2003	2.174435	49.9587	2.729066	11.13346	258.7501	0.700005	84.36412
EABL1991	7	1991	0.483851	59.24929	13.62339	13.14423		0.90768	59.3002
EABL1992	7	1992	0.813215	58.46114	13.45571	14.32417	96.2162	1.032871	15.32648
EABL1993	7	1993	1.012869	48.60579	12.6043	20.189	50.90906	1.314561	53.07842
EABL1994	7	1994	0.859895	48.8397	17.0124	10.87413	239.4737	1.877948	37.21147
EABL1995	7	1995	0.485074	143.5731	7.453742	2.529783	-40.3226	1.877948	-63.3282
EABL1996	7	1996	0.215426	78.40025	10.90176	6.462227	-39.7097	2.40379	172.5632
EABL1997	7	1997	0.427442	45.14168	11.89635	10.54677	131.2363	2.884543	79.33863
EABL1998	7	1998	0.484813	302.2512	6.290566	2.961332	46.35463	4.120777	-68.8702
EABL1999	7	1999	0.745695	60.90466	11.90677	11.93971	43.39623	4.807575	299.6606
EABL2000	7	2000	0.72419	59.19615	13.87227	13.09587	15.37057	5.360085	4.155134
EABL2001	7	2001	0.777206	62.36626	17.98247	16.37469	26.5391	7.2	32.13551
EABL2002	7	2002	0.8222	54.04728	21.09431	23.19281	27.77778	9.200002	48.25893
EABL2003	7	2003	0.833474	67.35036	21.10641	18.31424	32.06522	12	-14.6565
FIRE1991	8	1991							
FIRE1992	8	1992							
FIRE1993	8	1993		47.35515	128.3793	135.1462		1.119046	
FIRE1994	8	1994	6.283166	75.83166	52.78734	47.79734		1.345239	-24.9297
FIRE1995	8	1995	3.666722	76.15305	55.83158	57.14449	-25.6757	1.833332	35.70783
FIRE1996	8	1996	3.452003	67.26775	50.4789	50.50854	21.21212	1.666667	2.91722
FIRE1997	8	1997	2.588146	69.1856	40.51224	42.39606	-5.45455	1.666667	-2.77203
FIRE1998	8	1998	2.384043	68.18203	35.76941	34.35756	12.34043	1.500001	-8.67519
FIRE1999	8	1999	1.718834	71.3169	22.8169	20.81496	-22.0497	0.999999	-36.2639
FIRE2000	8	2000	1.73038	95.16486	15.01556	15.58922	9.956698	0.999999	-25.0596
FIRE2001	8	2001	1.01726	83.43585	16.03609	17.57012	-31.6239	0.999999	14.05752
FIRE2002	8	2002	2.421991	120.2824	12.10065	12.29058	144.2857	0.999999	-30.6334
FIRE2003	8	2003	2.647285	88.4789	9.891534	8.524831	11.80126	0.500003	-32.0271
GWK1991	9	1991	0.153017	19.54708	8.336352	7.885737		0.749166	38.45741
GWK1992	9	1992	0.197948	35.57484	4.362484	4.195391	40.96864	0.749166	-45.0536
GWK1993	9	1993	0.159399	13.77553	12.87585	10.03705	59.93379	0.999954	244.6963
GWK1994	9	1994	1.106969	10.6968	26.5876	23.30965	783.3333	2.5	239.6479
GWK1995	9	1995	1.089569	85.24143	4.660554	1.171225	-2.30773	0.999954	-94.4638
GWK1996	9	1996	0.569109	73.6603	4.912382	1.39885	-46.8254	0.999954	18.68307
GWK1997	9	1997	0.605843	22.81095	8.146168	5.810566	13.63643	1.500046	325.5622
GWK1998	9	1998	0.96627	23.59213	25.30758	24.72589	102.0407	7.499886	379.2449
GWK1999	9	1999	0.407286	37.29174	3.189867	3.763213	-32.8794	2.5	-78.8055
GWK2000	9	2000	0.55581	27.98072	5.018068	4.65729	7.987845	2.5	33.26864

GWK2001	9	2001	0.515458	32.13641	9.397956	8.713179	8.247423	5	72.04185
GWK2002	9	2002	0.275639	-16.2618	-1.0779	-1.79161	-48.5	0.499977	-121.148
GWK2003	9	2003	0.439248	70.95073	2.669492	2.909841	68.13714	3.749943	259.2782
KAK1991	10	1991	0.4995	51.50369	5.252832	5.995232		0.666684	-23.3263
KAK1992	10	1992	1.083484	33.74378	9.090909	10.91754	140.2984	0.833316	91.58972
KAK1993	10	1993	1.006173	17.97577	20.23294	17.02529	174.3589	1.333316	214.7904
KAK1994	10	1994	1.555068	19.25259	16.96196	15.54892	77.14376	2	44.48224
KAK1995	10	1995	1.17654	57.8743	6.441425	5.136953	-21.3115	2	-64.6582
KAK1996	10	1996	1.148402	30.34525	9.645544	9.047864	6.06383	2.2	83.30448
KAK1997	10	1997	0.802703	26.63925	13.23797	10.85522	2.307692	2.75	49.78545
KAK1998	10	1998	1.125804	40.21968	6.701111	5.914363	48.19588	2.75	-34.8324
KAK1999	10	1999	0.779762	106.7974	2.728661	1.632713	-36.8794	2	-73.4339
KAK2000	10	2000	0.504766	-27.7296	0.80005	-2.0188	-36.3218	0.4	-215.146
KAK2001	10	2001	0.343886	0	0.053999	-2.58671	-34.5455	0	-24.1296
KAK2002	10	2002	0.305908	0	1.857544	-0.49296	-55.2778	0	85.96724
KAK2003	10	2003	0.403755	0	3.504051	4.34206	28.88199	0	682.4211
KCB1991	11	1991	0.743887	52.99783	2.967884	16.93295		1.085896	48.63835
KCB1992	11	1992	0.603857	37.73388	3.328295	23.51433	6.869875	1.206551	56.05731
KCB1993	11	1993	1.276616	21.0982	6.319302	47.70432	230.1115	1.809826	168.2732
KCB1994	11	1994	1.745554	19.34106	5.704003	43.3362	102.8061	2.171791	30.90202
KCB1995	11	1995	1.113485	21.27857	6.351419	43.22283	-3.7037	3.375	41.25164
KCB1996	11	1996	0.992519	31.40428	6.400983	34.34631	23.92157	5.25	5.399632
KCB1997	11	1997	0.880987	34.9749	7.093663	28.60183	18.05556	6	2.618183
KCB1998	11	1998	0.862698	73.58986	1.852049	9.170487	9.090909	4.5	-64.3549
KCB1999	11	1999	0.850266	0	-2.91256	-16.3772	-14.1026	0	-269.946
KCB2000	11	2000	0.641574	0	-1.02118	-5.38965	-28.3582	0	70.12417
KCB2001	11	2001	0.29278	0	0.540036	4.554387	-54.4444	0	182.2401
KCB2002	11	2002	0.41702	0	-6.68374	-44.3043	-12.1951	0	-885.549
KCB2003	11	2003	1.690588	30.81232	1.26374	9.134858	335.7639	1	116.1806
KQ1991	12	1991							
KQ1992	12	1992							
KQ1993	12	1993							
KQ1994	12	1994							
KQ1995	12	1995						0	
KQ1996	12	1996	0.888802		18.27919	30.23332		0	-33.5877
KQ1997	12	1997	0.713332	40.65805	12.75813	14.76127	-8.3404	0.749567	-40.032
KQ1998	12	1998	0.517855	35.08371	11.04015	21.1458	-9.30382	0.9987	54.40658
KQ1999	12	1999	0.480271	0	6.140887	17.00479	9.589041	0	-8.14307
KQ2000	12	2000	0.476597	19.74675	8.280239	39.08246	9.375	1.25	142.0878

KQ2001	12	2001	0.459834	42.52027	8.91207	18.28471	17.33333	1.25	-53.5592
KQ2002	12	2002	0.46623	31.91244	5.356274	11.77746	3.974658	0.600087	-35.9617
KQ2003	12	2003	0.549755	66.95652	3.631563	5.057632	24.14391	0.500433	-58.3429
KPLC1991	13	1991		20.57436	4.369556	8.967645		0.355551	75.02808
KPLC1992	13	1992	0.171226	35.49539	4.932452	4.939253		0.355551	-41.4515
KPLC1993	13	1993	0.120294	-8.70731	-1.41179	-22.2119	-34.8033	0.355551	-495.583
KPLC1994	13	1994	0.191687	5.186937	8.814119	38.90837	151.9999	0.399997	290.5909
KPLC1995	13	1995	0.363378	3.044986	12.59364	48.51684	206.1728	0.444444	88.99036
KPLC1996	13	1996	0.553311	12.62357	9.684092	32.86936	116.6667	1.777778	-3.50841
KPLC1997	13	1997	0.99558	27.19004	11.84928	34.9402	152.0492	5.333333	39.21365
KPLC1998	13	1998	1.090363	28.85885	10.46277	26.45648	40.74074	5.333333	-5.77551
KPLC1999	13	1999	1.560284	48.56967	9.474525	22.13128	45.2	8	-10.8595
KPLC2000	13	2000	3.794153	-9.8301	-7.84579	-33.2175	69.9115	2	-223.192
KPLC2001	13	2001	1.384649	0	-12.7506	-114.044	-90	0	-78.9019
KPLC2002	13	2002	0.428702	0	-8.36511	-81.7689	0.263158	0	34.66313
KPLC2003	13	2003	4.794536	0	-8.74759	-140.226	96.85039	0	-54.1471
NIC1991	14	1991	1.605557	36.15756	3.982759	33.10893		0.213287	44.74781
NIC1992	14	1992	1.490439	27.64578	5.242054	45.82927	39.18936	0.298612	83.11015
NIC1993	14	1993	2.129577	33.20166	9.693129	57.24334	183.8532	0.746506	108.1589
NIC1994	14	1994	3.676762	35.74653	8.877216	36.1708	124.5085	0.746506	-7.11923
NIC1995	14	1995	2.269558	30.12268	10.38635	50.67636	-6.66669	1.194412	89.87212
NIC1996	14	1996	1.77914	28.0891	8.719666	39.75857	10.22948	1.199751	7.719095
NIC1997	14	1997	1.930337	33.08502	7.772412	29.31139	90.4696	1.600008	13.2237
NIC1998	14	1998	1.394432	37.13475	5.6773	17.20962	-16	1.400007	-22.0423
NIC1999	14	1999	1.453154	49.31338	6.342592	15.25156	17.39144	1.799997	-3.18176
NIC2000	14	2000	0.662011	47.4572	6.157469	14.70511	-45.6945	1.799997	3.91127
NIC2001	14	2001	0.531403	51.94852	4.757501	11.19185	-6.4789	1.599996	-18.7962
NIC2002	14	2002	0.691689	71.93532	3.836292	9.731119	46.66665	1.999998	-9.73037
NIC2003	14	2003	1.215865	76.43129	3.528736	10.06035	91.25001	2.250002	5.882558
NMG1991	14	1991	0.241958	38.91769	15.03041	10.93681		0.266561	24.2221
NMG1992	15	1992	0.297672	44.63135	15.85067	9.843396	49.23042	0.319869	3.642322
NMG1993	15	1993	0.348444	31.09567	18.46871	13.16465	68.62762	0.355421	58.94648
NMG1994	15	1994	1.308047	13.62892	25.36433	25.4533	408.974	0.399832	154.6476
NMG1995	15	1995	1.203693	13.70558	26.27841	23.48264	27.89901	0.499813	23.99947
NMG1996	15	1996	1.302171	15.79784	23.24451	16.1673	16.23707	0.61086	-18.7767
NMG1997	15	1997	1.837258	17.23531	26.22361	24.99879	82.32152	0.915888	79.29103
NMG1998	15	1998	3.195714	18.00919	26.75909	23.2343	113.3241	1.099065	14.84348
NMG1999	15	1999	2.017881	25.20194	14.62277	14.97384	-26.2682	1.166355	-24.1654
NMG2000	15	2000	1.309694	31.65906	11.62508	11.01781	-29.7501	1.166355	-19.1842

NMG2001	15	2001	0.748574	32.60616	13.06261	13.45088	-33.7998	1.564486	31.53423
NMG2002	15	2002	2.008043	33.11045	17.63599	17.69784	201.7973	2.499065	44.11094
NMG2003	15	2003	4.127177	44.37624	21.51611	26.1844	114.2857	5	55.5497
Sasi1991	16	1991	0.641518	80.87741	23.66464	17.71419		1.111113	
Sasi1992	16	1992	0.767782	67.65097	25.438	18.68682	47.05882	1.111113	
Sasi1993	16	1993	1.093309	30.84315	69.96897	62.08748	152.3077	2.222225	
Sasi1994	16	1994	4.829529	79.15424	26.36584	22.26311	404.1667	2.66667	-54.0835
Sasi1995	16	1995	0.360472	99.53518	6.848226	5.25774	-69.5129	2.000016	-41.2595
Sasi1996	16	1996	0.432681	99.85026	4.351589	2.873003	27.82375	1.666675	-13.7144
Sasi1997	16	1997	0.683545	76.39179	6.981208	4.402397	67.32051	2.000016	54.14735
Sasi1998	16	1998	1.175225	93.69135	8.312413	5.307109	81.84769	3.000011	22.16086
Sasi1999	16	1999	0.950919	72.95025	1.913826	0.933929	-23.2877	0.500011	-82.7988
Sasi2000	16	2000	0.58275	68.62655	6.200064	4.844678	-33.7838	2.000016	408.0434
Sasi2001	16	2001	0.26918	274.1759	1.095554	0.477961	-51.3669	0.999995	-90.0755
Sasi2002	16	2002	0.303978	-273.847	-2.97764	-0.82094	-4.08798	0.500011	-255.685
Sasi2003	16	2003	0.416396	0	-4.22745	-3.95921	29.15254	0	-322.578
SCB1991	17	1991	1.906939	56.0016	3.95736	29.85789		0.708334	25.1651
SCB1992	17	1992	1.508079	46.18775	4.877874	42.07437	11.53842	0.999998	71.17276
SCB1993	17	1993	4.104144	71.03971	3.074594	27.46577	249.0384	1.249999	-18.7289
SCB1994	17	1994	6.742016	88.29195	4.62748	39.23731	79.88484	2.500002	60.92027
SCB1995	17	1995	4.107894	72.97264	6.648435	57.21322	-22.1477	3.333335	61.32423
SCB1996	17	1996	2.877327	53.7857	6.084821	46.85891	-1.41509	2.500002	1.754754
SCB1997	17	1997	2.35103	58.04985	5.542152	35.47307	2.577323	2.500002	-7.34567
SCB1998	17	1998	2.084307	57.66425	6.481204	44.12501	20.65217	3.333335	49.57006
SCB1999	17	1999	1.419816	70.21594	6.266522	37.57599	5.742572	4.933335	10.11103
SCB2000	17	2000	2.565577	125.0347	6.745764	42.52494	97.28254	11	22.58787
SCB2001	17	2001	2.498654	91.25506	6.208302	46.95897	13.63637	8.250002	3.976425
SCB2002	17	2002	3.390427	11.20713	5.531723	46.49525	37.5	1	-1.30193
SCB2003	17	2003	6.833444	8.86585	6.377078	54.85678	132.3077	1	26.40782
TPS1991	18	1991							
TPS1992	18	1992							
TPS1993	18	1993							
TPS1994	18	1994							
TPS1995	18	1995							
TPS1996	18	1996	1.01432	199.1495	25.66538	19.98115		2.712014	
TPS1997	18	1997	1.094158	85.35993	12.32378	8.541045		1.000026	-13.9711
TPS1998	18	1998	0.608437	58.28486	6.909941	12.68335	10.71429	1	46.44922
TPS1999	18	1999	0.675226	48.7534	6.684223	11.52177	0.689655	1	19.55035
TPS2000	18	2000	0.68549	51.22935	8.60608	9.386321	24.26472	1.100003	4.683876

TPS2001	18	2001	0.810273	43.99624	7.952035	10.37449	14.55698	1.100003	16.4403
TPS2002	18	2002		40.18076	8.156078	10.92871	27.05884	1.100003	9.495791
TPS2003	18	2003							
UCM1991	19	1991							
UCM1992	19	1992			58.52226	78.28889			
UCM1993	19	1993	1.626455	84.15206	40.647	51.88125		2.666667	
UCM1994	19	1994	4.029292	74.01651	29.81159	37.55489	208.8608	3.333333	42.11706
UCM1995	19	1995	2.981983	94.87306	31.10533	43.51639	-15.625	3.333333	-21.9836
UCM1996	19	1996	2.490716	77.04487	24.3164	35.24174	4.142012	3.333333	23.14001
UCM1997	19	1997	3.690752	89.35398	21.12403	45.03976	66.73077	3.35	-13.3446
UCM1998	19	1998	3.577788	71.9742	16.42118	31.73551	19.375	3.75	38.97078
UCM1999	19	1999	1.869683	73.65307	18.3412	35.16647	-36.3636	3	-21.8235
UCM2000	19	2000	3.538896	63.67849	4.092558	10.07963	102	3	15.66396
UCM2001	19	2001	1.990605	107.6257	3.739458	5.334193	-29.2632	1.6	-68.4445
UCM2002	19	2002	1.788163	60.40593	-4.25363	-24.5802	-14.8438	0.5	-44.3216
UCM2003	19	2003	2.543311	0	-16.9998	-172.187	11.21495	0	-495.798
ToTL1991	20	1991	0.736251	65.0454	18.94203	42.5637		0.583046	18.15858
ToTL1992	20	1992	2.381267	72.25853	15.91883	38.57573	300	0.666338	2.877263
ToTL1993	20	1993	6.534858	67.33807	43.4874	105.6636	325	2.165599	248.7481
ToTL1994	20	1994	10.44773	40.42738	22.60127	18.54406	79.78571	0.283194	-78.2184
ToTL1995	20	1995	5.309034	23.18979	25.47513	38.40759	-30.6	0.416461	156.3716
ToTL1996	20	1996	3.893302	80.88745	17.06435	18.84584	-21.0526	0.832923	-42.6616
ToTL1997	20	1997	3.19866	112.176	13.9033	14.00117	-15.2308	0.86624	-25.0081
ToTL1998	20	1998	2.559229	52.32618	20.23593	32.24604	-0.95238	0.999507	147.3597
ToTL1999	20	1999	1.808133	34.52903	22.80773	44.16886	0.816327	1.132775	71.74822
ToTL2000	20	2000	1.849553	0	9.399699	13.4988	17.3913	0	-62.5496
ToTL2001	20	2001	0.910871	0	3.064225	-11.6097	-33.9995	0	-207.55
ToTL2002	20	2002	1.198426	82.62331	10.02356	13.55754	102.4049	1.770615	262.1789
ToTL2003	20	2003	1.824636	77.13347	11.10394	16.67075	91.36251	2.603854	57.52594

6.3 Regression Analysis: BtM versus DPR, ROTA, ROE, RPS, DPS, GREarn

The regression equation is as follows:

BtM = 1.44 + 0.00455 DPR + 0.0832 ROTA + 0.0423 ROE + 0.00404 RPS - 0.300 DPS - 0.00123 GREarn

214 cases used 46 cases contain missing values

Predictor	Coef	SE Coef	T	P
Constant	1.4390	0.5492	2.62	0.009
DPR	0.004550	0.007166	0.63	0.526
ROTA	0.08320	0.03632	2.29	0.023
ROE	0.04225	0.01281	3.30	0.001
RPS	0.004035	0.002446	1.65	0.101
DPS	-0.3004	0.1274	-2.36	0.019
GREarn	-0.001229	0.001836	-0.67	0.504

S = 4.444 R-Sq = 15.1% R-Sq(adj) = 12.6%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	6	725.26	120.88	6.12	0.000
Residual Error	207	4088.73	19.75		
Total	213	4813.99			

Source	DF	Seq SS
DPR	1	18.61
ROTA	1	398.75
ROE	1	165.63
RPS	1	26.78
DPS	1	106.64
GREarn	1	8.86

Unusual Observations

Obs	DPR	BtM	Fit	SE Fit	Residual	St Resid
42	91	6.288	5.833	3.168	0.456	0.15 X
45	59	1.573	3.396	2.981	-1.823	-0.55 X
61	48	14.000	2.520	0.392	11.480	2.59R
86	302	0.485	2.497	1.812	-2.012	-0.50 X
96	76	3.667	8.147	1.576	-4.480	-1.08 X
108	11	1.107	6.800	1.777	-5.693	-1.40 X
142	0	0.417	0.050	1.609	0.367	0.09 X
167	0	1.385	-4.707	1.467	6.091	1.45 X
169	0	4.795	-4.756	1.785	9.551	2.35RX
206	274	0.269	2.401	1.738	-2.132	-0.52 X
207	-274	0.304	0.058	2.297	0.246	0.06 X
247	0	2.543	-6.596	2.076	9.139	2.33RX
249	72	15.919	5.729	0.831	10.190	2.33R
250	67	43.487	10.183	1.292	33.304	7.83R
251	40	22.601	4.620	0.640	17.981	4.09R
252	23	25.475	4.846	0.750	20.629	4.71R
253	81	17.064	3.740	0.546	13.324	3.02R
254	112	13.903	3.407	0.637	10.496	2.39R
255	52	20.236	4.238	0.550	15.998	3.63R
256	35	22.808	4.935	0.609	17.873	4.06R

R denotes an observation with a large standardized residual;
X denotes an observation whose X value gives it large influence.

6.4 Regression Analysis: BtM versus ROTA, ROE, RPS

The regression equation is
BtM = 1.33 + 0.0380 ROTA + 0.0483 ROE + 0.00337 RPS

221 cases used 39 cases contain missing values

Predictor	Coef	SE Coef	T	P
Constant	1.3262	0.4346	3.05	0.003
ROTA	0.03803	0.03276	1.16	0.247
ROE	0.04828	0.01147	4.21	0.000
RPS	0.003366	0.002389	1.41	0.160

S = 4.498 R-Sq = 14.5% R-Sq(adj) = 13.3%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	3	742.71	247.57	12.23	0.000
Residual Error	217	4391.31	20.24		
Total	220	5134.02			

Source	DF	Seq SS
ROTA	1	333.20
ROE	1	369.33
RPS	1	40.18

Unusual Observations

Obs	ROTA	BtM	Fit	SE Fit	Residual	St Resid
42	31	6.288	8.240	2.929	-1.952	-0.57 X
61	9	14.000	2.928	0.344	11.072	2.47R
64	11	8.000	7.092	1.084	0.908	0.21 X
65	11	20.200	9.856	1.621	10.344	2.47RX
96	56	3.667	6.122	1.424	-2.455	-0.58 X
97	50	3.452	5.756	1.234	-2.304	-0.53 X
108	27	1.107	6.100	1.715	-4.993	-1.20 X
167	-13	1.385	-4.968	1.368	6.353	1.48 X
168	-8	0.429	-2.939	1.054	3.368	0.77 X
169	-9	4.795	-5.451	1.672	10.245	2.45RX
198	70	1.093	7.497	1.741	-6.404	-1.54 X
247	-17	2.543	-7.596	1.956	10.140	2.50RX
249	16	15.919	4.804	0.655	11.115	2.50R
250	43	43.487	9.176	1.145	34.312	7.89RX
251	23	22.601	3.350	0.477	19.252	4.30R
252	25	25.475	4.046	0.600	21.429	4.81R
253	17	17.064	2.814	0.422	14.250	3.18R
254	14	13.903	2.480	0.375	11.424	2.55R
255	20	20.236	3.650	0.450	16.586	3.71R
256	23	22.808	4.329	0.518	18.479	4.14R

R denotes an observation with a large standardized residual;
X denotes an observation whose X value gives it large influence.

6.5 Regression Analysis: BtM versus DPR, DPS, GREarn

The regression equation is
BtM = 2.45 + 0.00870 DPR - 0.086 DPS + 0.00215 GREarn

231 cases used 29 cases contain missing values

Predictor	Coef	SE Coef	T	P
Constant	2.4477	0.5072	4.83	0.000
DPR	0.008698	0.007473	1.16	0.246
DPS	-0.0859	0.1262	-0.68	0.497
GREarn	0.002152	0.001846	1.17	0.245

S = 4.734 R-Sq = 1.3% R-Sq(adj) = 0.0%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	3	64.75	21.58	0.96	0.411
Residual Error	227	5087.24	22.41		
Total	230	5151.99			

Source	DF	Seq SS
DPR	1	25.29
DPS	1	9.00
GREarn	1	30.46

Unusual Observations

Obs	DPR	BtM	Fit	SE Fit	Residual	St Resid
37	88	1.662	2.033	1.284	-0.371	-0.08 X
42	91	6.288	1.661	1.801	4.628	1.06 X
45	59	1.573	-0.747	3.069	2.320	0.64 X
61	48	14.000	2.453	0.365	11.547	2.45R
86	302	0.485	4.575	1.854	-4.090	-0.94 X
91	67	0.833	1.972	1.219	-1.138	-0.25 X
130	0	0.404	3.916	1.368	-3.513	-0.78 X
142	0	0.417	0.542	1.701	-0.125	-0.03 X
206	274	0.269	4.553	1.778	-4.284	-0.98 X
207	-274	0.304	-0.527	2.407	0.831	0.20 X
218	125	2.566	2.639	1.083	-0.074	-0.02 X
248	65	18.942	3.002	0.421	15.940	3.38R
249	72	15.919	3.025	0.440	12.894	2.74R
250	67	43.487	3.383	0.554	40.105	8.53R
251	40	22.601	2.607	0.427	19.995	4.24R
252	23	25.475	2.950	0.503	22.525	4.79R
253	81	17.064	2.988	0.474	14.076	2.99R
254	112	13.903	3.295	0.638	10.608	2.26R
255	52	20.236	3.134	0.445	17.102	3.63R
256	35	22.808	2.805	0.376	20.003	4.24R

R denotes an observation with a large standardized residual
X denotes an observation whose X value gives it large influence.

6.6 Regression Analysis: BtM versus ROTA, ROE, RPS, Code

The regression equation is
BtM = - 1.08 + 0.0382 ROTA + 0.0493 ROE + 0.00366 RPS + 0.234 Code

221 cases used 39 cases contain missing values

Predictor	Coef	SE Coef	T	P
Constant	-1.0824	0.6638	-1.63	0.104
ROTA	0.03825	0.03131	1.22	0.223
ROE	0.04935	0.01097	4.50	0.000
RPS	0.003656	0.002284	1.60	0.111
Code	0.23388	0.05028	4.65	0.000

S = 4.299 R-Sq = 22.3% R-Sq(adj) = 20.8%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	4	1142.48	285.62	15.46	0.000
Residual Error	216	3991.54	18.48		
Total	220	5134.02			

Source	DF	Seq SS
ROTA	1	333.20
ROE	1	369.33
RPS	1	40.18
Code	1	399.77

Unusual Observations

Obs	ROTA	BtM	Fit	SE Fit	Residual	St Resid
42	31	6.288	7.184	2.808	-0.895	-0.28 X
61	9	14.000	1.720	0.419	12.280	2.87R
65	11	20.200	8.833	1.564	11.367	2.84RX
96	56	3.667	5.650	1.364	-1.983	-0.49 X
97	50	3.452	5.289	1.184	-1.837	-0.44 X
108	27	1.107	6.054	1.639	-4.947	-1.24 X
167	-13	1.385	-4.486	1.311	5.871	1.43 X
169	-9	4.795	-4.942	1.602	9.737	2.44RX
198	70	1.093	8.956	1.693	-7.863	-1.99 X
247	-17	2.543	-5.745	1.911	8.288	2.15RX
249	16	15.919	7.204	0.811	8.714	2.06R
250	43	43.487	11.661	1.218	31.827	7.72RX
251	23	22.601	5.666	0.675	16.935	3.99R
252	25	25.475	6.353	0.758	19.122	4.52R
253	17	17.064	5.101	0.636	11.964	2.81R
254	14	13.903	4.762	0.608	9.141	2.15R
255	20	20.236	5.957	0.657	14.279	3.36R
256	23	22.808	6.650	0.703	16.158	3.81R

R denotes an observation with a large standardized residual;
X denotes an observation whose X value gives it large influence.

6.7 Regression Analysis: BtM versus ROTA, ROE, RPS, DPS

The regression equation is
BtM = 1.76 + 0.0403 ROTA + 0.0531 ROE + 0.00436 RPS - 0.227 DPS

221 cases used 39 cases contain missing values

Predictor	Coef	SE Coef	T	P
Constant	1.7596	0.4823	3.65	0.000
ROTA	0.04025	0.03255	1.24	0.218
ROE	0.05313	0.01165	4.56	0.000
RPS	0.004358	0.002423	1.80	0.073
DPS	-0.2274	0.1130	-2.01	0.045

S = 4.467 R-Sq = 16.0% R-Sq(adj) = 14.5%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	4	823.54	205.88	10.32	0.000
Residual Error	216	4310.48	19.96		
Total	220	5134.02			

Source	DF	Seq SS
ROTA	1	333.20
ROE	1	369.33
RPS	1	40.18
DPS	1	80.83

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