

**VALUE PREMIUM AND THE EFFECT OF SIZE: EVIDENCE  
FROM NAIROBI STOCK EXCHANGE**

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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 6/10/2009

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

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### **Dedication**

To my late father Thuku wa Muita *this is a tribute, your great courage and inspiration gave me the strength to persevere during the hard times*

To my mother Miriam Wangeci *your wise counsel and guidance saw me through this project.*

*I say thank you*

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## List of Abbreviations

AMEX	American Stock Exchange
BE	Book value per share times shares outstanding
BV/MV	Book Value to Market Value of Equity
B/M	Book Value to Market Ratio
CAPM	Capital Asset Pricing Model
C/P	Cash flow to Price Ratio
E/P	Earning to Price Ratio
FM	Fama Macbeth Regression
ME	Stocks price times shares outstanding
NASDAQ	National Association of Security Dealers Automated Quotations
NSE	Nairobi Stock Exchange
NYSE	New York Stock Exchange
PE	Price Earning Ratio
P/S	Price sales Ratio
SUR	Seemingly Unrelated Regression
S&P	Standard and the poor

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### **Abstract**

Fama and French report a value premium of 7.86 % per annum on the universe of NYSE, AMEX and NASDAQ for the period 1963 to 1995. Loughran( 1997), however establishes that the value premium is driven by small cap stocks. In his study of the three stock exchanges he finds no book-to market effect for large cap stocks and that the largest book-to market effect occurs for the smallest cap stock. At the NSE Muhoro (2004) establishes the existence of a weak value premium and Ngigi (2006) reports no significant difference between value and growth stock. We set out to investigate the existence of value premium and the effect of size at the NSE. Our findings report the existence of value premium averaging 0.5 % per month on portfolio based on B/M ratio and 2.34% on portfolio based on E/P. Contrary to Loughran( 1997) findings we establish that the value premium at the NSE is driven by large cap firms which register a value premium excess of small cap firms by 1.01% monthly average return on portfolio based on B/M ratio. No substantial differences in findings are found whether portfolios are analysed based on B/M or E/P ratio.

## CHAPTER ONE: INTRODUCTION

### 1.1 Background to the Study

In Finance the word value premium refers to the excess return expected as a result of investing in value stocks as opposed to growth stocks which are expected to have persistently high earnings (Fama and French, 1998). In studying U.S stocks, Fama and French (1992, 1996,) and (Lakonishok, Shleifer and Vishney 1994) show that for U.S., there is strong value premium in average returns. That is, value stocks have higher average returns than growth stocks. Lakonishok (1991) document a strong value premium in Japan.

In Value premium investment strategy investors purchase value stocks rather than growth stocks in order to benefit from long term performance of value stocks in the form of higher average return. Fama and French (1992) estimate that, for the period 1975 through to 1995, the difference in average returns of high and low BE/ME stocks was 7.86% per year.

This has led to a new important development in equity management in the last several years i.e. the creation of portfolio strategies based on value and growth oriented styles, where value stocks have been defined as stocks that appear to be undervalued for reasons besides earnings growth potential. These stocks are usually identified based on high dividend yields, low P/E ratios and /or low price-to-book ratios. Growth stocks are known for their lack of dividends and rapidly increasing market prices. Defined by their tendency to grow faster than market, these companies generally reinvest all earnings into infrastructure in order to maintain rapid growth, rather than directly pay out their earning to investors (Reilly and Brown, 2000).

A number of studies report that value strategies have higher average returns than growth strategies; Basu (1983), Rosenberg et al (1985), DeBund and Thaler (1985, 1987), Jaffe et al (1989), Fama and French (1992, 1996), Lakonishok et al (1994). In this sense investing in stocks of firms that have high book-to-market equity (B/M), which also have low earning is classified as value strategy, where investing in stocks of firms that have low B/M with high earning is classified as growth strategy.

It has been documented that the historical superiority of value stocks over growth stocks may be influenced by the firm size. According to Banz (1981) stocks of small firms tend to have higher returns than stocks of larger firms, size being measured in terms of capitalisation (the number of outstanding shares times the current market price per share). Arshanapalli et al (1998) found that the superior performance of value stocks over growth stocks is positively

and significantly associated with the firm size variable (small-large) in most countries. Fama and French (1998) examine both value premium and size effect on the average returns in emerging markets. They report that value stock portfolio returns in emerging markets confirm superior performance of value stocks in developed markets. More over, the returns on small and large capitalisation portfolios suggest there is an important size effect. Gonene and karan (2003) suggest that since a value portfolio includes stocks with lower capitalisation, evidence of small cap having a higher average returns than large cap stocks may be the reason for the value premium.

In his study Loughran (1997) raises an interesting question on whether a significant value premium exists for stocks that belong in the largest size groups which are widely followed and are thus unlikely to offer any longer term premium based on fundamental analyses. His findings are that the book-to- market effect is greatly diminished for large firms relative to small firms. In the largest size portfolio, there is only a 1.8% annual difference (t- statistic of 0.70) between value and growth securities, compared to more than 11% per Year (t-statistic of 4.42) in the smallest size portfolio.

Similar findings are reported by Lakonishok, Shleifer, and Vishy (1994) with the smallest size group average return of almost 19% per year compared to almost 12% per year for the largest size quintile. Similarly, Kothari, Shanken, and Sloan (1995) present evidence that the book-to market effect for the largest 500 compustat-listed firms is substantially lower than when the sample includes all the firms. This result is consistent with the evidence presented by Fama and French (1992 and 1993).

Fama and French (1993), report, for the largest size quintile, an average monthly excess return of 0.40 % ( standard deviation of 4.95) for low BE/ME firms compared to 0.59(standard deviation of 4.85) for high BE/ME firms. This implies a statistically insignificant average return difference between value and growth of only 2 % per year for groups of firms which represent, on average, 73% of the market capitalisation of all three exchanges (NYSE, AMEX and NASDAQ).

All the studies mentioned above are in developed capital markets, except the study by French on emerging market and Gonene and Karan (2003) done in Istanbul stock exchange. Two studies have been done in Kenya to test small size effect at the NSE. Oluoch (2004) found out that small firms did not consistently outperform or underperform the market, Ndungu (2003) had found out that for the period 1996-2002 the smallest portfolio weakly outperformed the large portfolio all the years under consideration. Emerging markets differ from developed

markets in terms of size, return volatility, market concentration, risk, and technology. The emerging markets studied by Fama and French included only two in Africa; that is Nigeria and Zimbabwe.

The results of academic studies have formed the basis for investment strategies that are widely applied in equity market (Chan et al 2004). The topic of value and growth investment strategies is a prime example of fruitful exchange of ideas between academic research and investment practice.

Investors using value premium strategy would expect to earn excess returns as a result of investing in value stocks as opposed to growth stocks. However Loughran (1997) findings is that to really exploit the difference between value and growth firms require concentrated portfolios in small quintile firms.

## **1.2 Statement of the Problem**

In the current competitive market it's imperative that investors be able to identify the investment strategy that will promise superior performance in a particular stock market. Fama and French (1992) document that size and the book-to- market ratio provide a simple and powerful characterisation of the cross section of average returns for the 1963-1990 periods. They report that stocks with high book-to-market ratios have reliably higher returns than low book-to-market stocks of the same size (value premium). Fama and French assert that these findings have powerful implications for portfolio formation and performance evaluations for investors.

Loughran (1997) however asserts that there exists conflict between the finance literature and actual money manager's performance. He asserts that finance literature declares that value firms (High book-to-market) ratios have reliably higher realised returns than growth firms (low book-to-market). However, the realised returns on value and growth money managers are not materially different.

In his study (Loughran 1997) finds no book-to-market effect for large cap stocks and the largest book-to- market effect occurs for the smallest-cap stocks. This implies that to really exploit the difference between value and growth firms requires concentrated portfolios in small quintile firms.

A local study by Ngigi (2006) found no significant difference in performance between value and growth stocks for the years (1999-2003). Muhoro (2004) findings were that a weak value

premium was tested for the years (1997-2001). These studies were based on performance of all the firms in the stock exchange without categorising firms according to size.

While acknowledging the fact that the above two local studies found virtually no value premium in the NSE, this study took a different approach in testing the existence of value premium at the NSE. According to Manjeet et al (1999) there is evidence that results vary when different value measures are used. While the above two studies used the Book-to-market ratio only to separate value and growth stock, this study used both Book-to-market ratio and Earning yield [E/P] in differentiating growth from value stocks for comparison purposes. According to Sharpe et al (2006) the E/P ratio is the most commonly used ratio used by security analysts to value firms as expected by investors.

In this approach the performance of value versus growth stocks portfolios was evaluated on the bases of firm size (market value of equity). This is the conventional methods that have been used in most of the international studies on value premium (Fama and French 1992 and 1995), Loghan (1997), Lakonishok et al (1994) and Gonene and Karan (2003).

### **1.3 Objective of the Study**

The objective of this study was to establish the existence of value premium and the effect of size at the NSE

### **1.4 Importance of the Study**

#### *Individual and institutional investors at stock exchange*

The investors can use the study to know the best investment strategy. Investors using value premium investment strategy can use the study to decide whether to invest in small-cap or large-cap stocks.

#### *Academicians and Researchers*

The result of the study will add to the body of knowledge in the Kenyan Finance market and form a basis for further research in this area.

#### *Investment advisors*

The results of the study will assist them advising the client on stock portfolio management.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.0 Introduction

The topic of value investment strategies is one of the most currently discussed finance topic. However it is also equally one of the least understood phenomena. As you go through the literature review it becomes evident that different theories have different explanations for the superior performance of value stock over the growth stock. What is also clear is that there are still conflicting findings of the existence of value premium especially in the emerging markets. There is however almost a consensus on studies done in the developed market that value stocks outperforms growth stocks and this has led to many money managers especially in the developed markets adopting value investment strategies in the portfolio management. I have endeavoured to get in depth knowledge on the issues above and in particular the relationship between value premium and the size factor. In addition I have concentrated my literature in reviewing of theories and going through empirical studies in the topic and finally narrowed down to the empirical studies done in Kenya.

#### 2.1 Definition of Terms

##### 2.1.1 Book value to Market ratio (B/M)

According to Walsh (1996) Market-to-Book value ratio, which captures the relationship between the balance sheet value of ordinary shares and the 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 overall status. Rowly and Brown (1996) asserts that the price to book value ratio summarises the investors view of the company its management, its profit, its liquidity and future prospects. What most investors know is how to calculate the price -to-book value ratio however the calculation do not identify factors that derive the ratio.

According to Sharpe W.F., et al (2006) the book-value-to-market value ratio is calculated as follows. First, the book value of the firm's common stock is determined by using the most recent balance sheet data and calculating the total value of stockholders equity. Second, the market capitalisation of the firm's common stock is determined by taking the most recent market price for the firm's common stock and multiplying it by the number of shares outstanding. Lastly the book value of stockholders equity is divided by the market

capitalisation to arrive at the BV/MV ratio. Relatively low values of this ratio characterise growth stocks and relatively high values characterise value stocks

### 2.1.1.2 Price Earning Ratio and Earning Yield

$$\text{Price earning ratio [PE]} = \frac{\text{market price per share}}{\text{Earning per share}}$$

It is sometimes referred to as the “multiple” because it shows how much investors are willing to pay per shilling of earnings. It relates the earning per share to the price the shares sell at the market. A high P/E ratio indicates strong shareholder confidence in the company and its future. It indicates how the stock market is judging the company’s performance and prospects (Asienwa, 1992). The P/E ratio is widely used by security analysts to value the firms performance as expected by investors. It indicates investor’s judgements or expectations about the firm’s performance (Sharpe W.F., et al 2006).

$$\text{The earning yield} = \frac{\text{Earning per share}}{\text{market price per share}}$$

It is the reciprocal of the P/E ratio and expresses the rate of return on an investment.

- i. Research literature often looks at the earning Yield as opposed to the price earning ratio. Two advantages of using E/P ratio are:
- ii. Companies with negative earnings are automatically ranked as the lowest E/P ratios, whereas they are not automatically ranked as having the highest P/E ratios.
- iii. P/E ratios ‘blow up’ when earnings approach zero, and this can cause statistical problems. This does not happen with the E/P ratios.

To benefit from these advantages in this study, stocks will be sorted out into value and growth categories on the basis of earning yield E/P.

### 2.1.1.3 Value vs. Growth strategies

A number of studies report that value strategies report that value strategies have higher average returns than growth strategies; Basu (1983), Rosenberg et al (1985), Debondt and Thaler (1985), Jaffe et al (1989), Fama and French (1992, 1995), Lakonishok et al (1994). In this sense investing in stocks of firms that have high book-to-market equity (B/M), which also have low earning is classified as a value strategy, where investing in stocks of firms that have low B/M with high earning is classified as growth strategy.

## 2.2 Size, E/ P Ratio and Seasonality

The efficient market hypothesis predicts that security prices follow a random walk; it should be impossible to predict future returns based on publicly available information. Specifically, it should be impossible to predict changes in stock prices based on past price behaviour. However, a research conducted by Rozeff and Kinney (1976) found seasonal patterns in an equal-weighted index of New York Stock Exchange prices over the period 1904-74. Specifically, the average monthly return in January was about 3.5 percent, while other months averaged about 0.5 percent. Over one-third of the annual returns occurred in January alone.

In his study Banz (1981) found that market equity, ME (a stock's price times shares outstanding), adds to the explanation of the cross-section of average returns provided by market  $\beta$ s. Average returns on small (low ME) stocks are too high given their  $\beta$  estimates, and returns on large stocks are too low. According to Sharpe W. F., et al (2006) stocks can be classified as growth or value using the BV/MV ratio and as large or small using their size. Stock's market capitalisation (the number of outstanding common shares times the current market price per share) is used as the measure of its size. Fama and French (1992) assigned stocks to one of 12 size portfolios after ranking them at the end of each June on the bases of market capitalisation. They found a clear inverse relationship between size and average returns. That is, stocks of small firms tend to have higher returns than stocks of larger firms. Hence when some people refer to a size effect in stock returns, they are really referring to a "small firm effect".

In their study Lakonishok and Smidt (1986) found out that the high returns in January are not observed in an index that is composed of only large firms, like the Dow Jones Industrial Average. Thaler (1987) asserts that since an equal-weighted index is a simple average of the prices of all firms listed on the NYSE, it gives small firms greater weight than their share of market value. Thus, finding a January effect only in an equal-weighted index suggests that it is primarily a small firm phenomenon. In an investigation of the small firm effect-small firms earn higher than expected returns Banz, (1981) and Donald Keim (1983) found that the excess returns to small firms were temporally concentrated. Half of the excess returns came in January, and half of the January returns came in the first five trading days.

Jaffe, Keim and Westerfield (1989) examines the relation between the size and E/P effects with a sample period, 1951-1986 They find that over the entire period, the earnings yield effect is significant in both January and the other eleven months. While these results hold in



the later sub period (1969-1986), the E/P effect in the earlier sub period (1951-1968) is significant only in January. Conversely, the size effect is significantly negative only in January in the overall period and in both sub periods. Their analysis suggests that the results of prior studies conflict because the magnitude of the two effects is period specific. They find uniquely anomalous returns for stocks with negative earnings, an area ignored by previous researchers. These firms tend to be among the smallest firms on the exchange. Furthermore, the results on E/P are not affected by their technique of ranking first on E/P and then on market value. Finally, they find evidence of consistently high returns in firms of all sizes with negative earnings.

In his study Keim (1990), on the effect of firm size and E/P ratio on firm's returns found that Size and E/P effects were evident. The smaller the average market value of the securities in a portfolio, the higher its average returns; the higher the average E/P of a portfolio, the higher its average returns. The average size and E/P columns indicate that small (large) firms tend to have high (low) E/Ps, and vice versa. For the stocks with positive earnings, two relations between returns and the ranking variables (size and E/P) emerge. First, returns are negatively related to market value. Second, average returns tend to be positively related to the E/P ratio. The mean difference between returns of the highest and lowest-E/P portfolios, reported in the last column, indicates a positive and significant E/P effect in each size classification.

Jaffe, Keim and Westerfield (1989) employ a Seemingly Unrelated Regression (SUR) model to simultaneously adjust for portfolio risk and test for significance of the size and E/P effects. In the overall period from 1951 to 1986, the findings also indicate a difference between January and the rest of the year: whereas the coefficient on E/P is significant in January (t-value is 2.62) and in the other months (t-value is 2.97), the size coefficient is significant only in January (t = -9.01). To test whether price is subsumed by size and as a final check on the relation between price, size, and the E/P ratio, They estimate the price coefficient, the size coefficient, and the earnings to price coefficient in January and non-January months using SUR model. The size coefficient is significant in January (t = -4.65) and insignificant in the non-January months (t = -0.49).

Jaffe et al (1989) finds that the non-January size coefficients are actually larger (in absolute value), suggesting some interaction with the price variable. The price coefficient is also significant in January (t = -7.49) and is insignificant in non-January months. The earnings to price coefficient is positive and insignificant in January (t = 0.28) and significant in non-January months (t = 2.97), resulting in a significantly positive E/P effect when estimated over

all months. Their results suggest that the negative relation between returns and size and/or price is primarily concentrated in January while the E/P effect is more pervasive through-out the remainder of the year.

Keim (1990), portray a conditional E/P effect where both the January and non-January slope coefficients increase with increasing size of the stocks in the portfolio (with t-values ranging from 1.33 to 3.39 in the two largest-size groups). Also, in contrast to the size-related results, the E/P-related January coefficient is significantly larger than the non-January coefficient only in the largest-size group.

His evidence is consistent with the hypothesis that expected returns change over time and the level of small-firm prices contains information about the changing expectations. The coefficients on the small-firm-price variable tend to increase with E/P and decrease with size, indicating that the magnitudes of the size and E/P effects are conditional on the level of the small-firm-price variable changes. That is, the expected returns of firms that are smaller and have higher E/Ps are more sensitive to changing levels of prices in the market and will increase more, relative to the returns of larger and lower- E/P firms, in periods of low prices.

### 2.3 A Review of Theories

Fama and French (1996) provides a multifactor model explanation to the pattern in stock returns not explained by the traditional CAPM and claim that anomalies disappear in their multifactor model. Their model states that excess expected returns on a portfolio is explained by: (1) the excess return on a broad market portfolio; (ii) the difference between the return on a portfolio of small stocks and returns on large stocks; and (iii) the difference between the return of high book-to-market equity stocks and the return on low book-to-market stocks. The finding suggest that high book to market equity firms have low earning to book equity and positive slopes on the HML factor. Conversely, low book-to-market equity firms have high earning on book equity and have negative slopes on the HML factor.

The Fama and French three factor model implies that if stock returns are explained by size and book-to-market effects, the intercepts of the regression ( $a_1$ ) should not be significant different from zero; that is if the pattern of value and growth portfolio return is a CAPM related anomaly in the sense that it cannot be explained by a single market factor model, then it should be captured by the Fama-French three factor model. Daniel Titman (1997) suggests that it is not the covariance structure of returns that explain the cross section of stock return, but the characteristics itself. Daniel and Titman ask two fundamental questions (I) Are there really pervasive factor directly associated with size and BE/ME? ; And (ii) are those risks

premier associated with these factors?

In essence Daniel and Titman attempt to establish a relationship between high return generated on small size and high book-to-market stocks and their respective factor loading. They construct portfolios of stocks sorted on size and book-to-market equity ratio, paying special attention to the seasonality effect on these returns. This separate the returns of the size and BE/ME portfolios in January and non-January months and observe that when separated for seasonality, the result of Fama and French constructed portfolios indicate that the size effect is exclusively a January phenomena and that the BE/ME effect occurs largely in January for Bigger firms (where they generate a return premium of 3% for the non January months).

In a reply to Daniel and Titman (1997), Davis et al (2000) extend the data on US stock returns back to 1926. They observe that: (I) the value premium in the US stock returns is robust; (ii) the characteristic based-based model of Daniel and Titman is sample-specific and (iii) the multifactor model of Fama and French (1996) explaining the value premium is better than the characteristic based model. The finding of Davis et al. Suggest that the evidence in favour of the characteristic model provided by Daniel and Titman (1997) appears to be a feature of the sample period.

In their study Chen and Zhang (1998) search for a relationship between market growth and the value stock effect to explain the inconsistent pattern of the value stock effect among the countries. They use the cross-country value stock effect that is measured by the ratio of return differences between small, high book-to-market stock (SH) and large low book-to-market stock (LL) to the excess market return standard deviation for six countries. Consistent with their argument, they find a negative correlation between market return and the cross-country value stock effect. They conclude that the fast growing market with higher market returns have smaller value stocks effect. Therefore in those markets, even though SH may still be somewhat riskier than LL, the spread is not as pronounced as in mature market like the United States.

In their two factor regression to explain monthly excess return on value and growth portfolios, Gonene and Karan (2003) finds that market movement does not explain the average return difference between value and growth stocks. The coefficient of the B/M factor is 0.10(not significantly different from 0) for the growth portfolios. These results imply that in a two factor model covering only B/M effect, the average return on the value and growth portfolios are explained by BM related risk factor. When the size risk factor is introduced in

the model rather than B/M in the two-factor asset pricing test, the average returns of the value and growth portfolios are negatively and significantly associated with firm size variable moreover including the size factor makes the average returns of each portfolio insensitive to market excess return.

Gonene and Karan (2003) assert that even though the Fama and French three factor model is able to explain 73% (96%) of variation in average value (growth) portfolios returns, there is still unexplained portion of average returns on each portfolio. The significant negative intercept in all regressions shows that excess returns ( $R_i - R_f$ ) for portfolios once negative indicating underperformance of value and growth stock when the other factors (market premium in one factor model and size and B/M in two and three factor model

## 2.4 Empirical Studies

Academics studies conducted over a period of 70 years have shown that value stocks have shown to beat growth stocks in market around the world. Arshanapalli et al (1998) examine the performance of value and growth investment strategies for North America, Europe, the Pacific Rim and International securities. He finds that regardless of geographic region value stocks show superior performance over growth stocks in the periods of 1975-95. This superior performance is positively and significantly associated with the firm size variable (small-large) in most countries.

Fama and French (1998) assert that for the period 1975 through 1995 the difference between the averages returns on global portfolios of high and low book-to-market stock is 7.68% percent per year. The Capital Asset Pricing Model (CAPM) does not explain why high book-to-market (HB/M) ratios of common stocks have higher average returns than firms with low book-to-market (LB/M) ratios. Never the less various theories have been advanced to explain this:

Fama and French (1995) and Lakonishok et al. (1994) show that the value premium is associated with relative distress. High B/M, E/P, and C/P firms tend to have persistently low earnings; low B/M, E/P, and C/P stocks tend to be strong (growth) firms with persistently high earnings. Lakonishok et al. (1994) and Haugen (1995) argue that the value premium in average returns arises because the market undervalues distressed stocks and overvalues growth stocks. When these pricing errors are corrected, distressed (value) stocks have high returns and growth stocks have low returns.

In contrast, Fama and French (1993 and 1996) argue that the value premium is compensation

for risk missed by the capital asset pricing model (CAPM) of Sharpe (1964) and Lintner (1965). This conclusion is based on evidence that there is common variation in the earnings of distressed firms that is not explained by market earnings, and there is common variation in the returns on distressed stocks that is not explained by the market return. They argue that stocks with high Book value-to-market value ratios are more prone to financial distress and hence riskier than glamour stocks. However, if value strategy is fundamentally riskier then it should underperform relative to growth strategy during undesirable states of the world when the marginal utility of wealth is high. Lakonishok et al (1994) tested this and found no evidence to support the view that superior returns on value stocks reflect their higher fundamental risk, none the less; there many possible proxies for risks so the risk based explanation cannot be definitely laid to rest.

De Bondt and Thaler (1985, 1987) argue that extreme losers outperform the market over the subsequent several years. Value strategies might produce higher returns because they are contrarian to "naive's strategies followed by other investors. These naive strategies might range from extrapolating past earnings growth too far into the future, to assuming a trend in stock prices, to overreacting to good or bad news, or to simply equating a good investment with a well-run company irrespective of price. Regardless of the reason, some investors tend to get overly excited about stocks that have done very well in the past and buy them up, so that these "glamour" stocks become overpriced. Similarly, they overreact to stocks that have done very badly, oversell them, and these out-of-favour "value" stocks become underpriced. Contrarian investors bet against such naive investors. Because contrarian strategies invest disproportionately in stocks that are underpriced and under invest in stocks that are overpriced, they outperform the market.

In their contribution Chan, Louis and Karceski (2000) draws two competing explanation; (1) based on behavioural Psychology and (11) based on agency cost. They suggest that individuals tend to use heuristic for decision making, which opens up the possibility of judgemental biases in investment behaviour. In particular investors may extrapolate past performance too far into the future. Value stocks tend to have a history of poor performance relative to growth stocks with respect to earnings, cash flows and sales. Therefore, in so far as investors and brokerage analysts overlook the lack of persistence in growth rates, and project past growth into the future, favourable sentiments is created for glamour stocks.

Chan, Louis and Karceski (2000) further argue that, agency factors may play a role in the higher prices of glamour stocks. Analysts have self-interest in recommending successful stocks to generate trading commissions, as well as investment banking business. Moreover,

growth stocks are typically in exciting industries and are thus easier to tout in terms of analyst reports and media coverage. All these considerations play into the career concerns of professional money managers and pension plan executives. Such individuals may feel vulnerable holding a portfolio of companies that are tainted by lacklustre past performance, so they gravitate toward successful growth-oriented stocks. The upshot of all these considerations is that value stocks become underpriced and glamour stocks overpriced relative to their fundamentals. Because of the limits of arbitrage, the mispricing patterns can persist over long periods of time.

Chan, Louis and Karceski (2000) assert that if investors incorrectly focus on past growth as a basis for growth forecasts and for valuation; prices should subsequently adjust as actual growth materializes. Evidence on whether such corrections take place was provided by, among others, La Porta, Lakonishok, Shleifer, and Vishny (1997). They looked at returns around earnings announcements for value and glamour portfolios based on sorts by BV/MV. A benefit of working with announcement returns is that over short intervals, differences in risk are less likely to be an issue than they are over long intervals.

La Porta et al (1997) findings indicates that in the first year after portfolio formation, investors tended to be disappointed as news emerged about the earnings of glamour stocks. The cumulative event return was -0.5 percent for the glamour portfolio. Investors were pleasantly surprised around announcements of value stocks' earnings; the cumulative event return for these stocks was 3.5 percent in the first year. In the second and third years, the contrast between the market's responses to the subsequent earnings performance of the two portfolios continued to be large and statistically significant. This evidence supports the argument that expectation errors are at least part of the reason for the superior returns on value stocks. Specifically, investors have exaggerated hopes about growth stocks and end up being disappointed when future performance falls short of their expectations. By the same token, they are unduly pessimistic about value stocks and wind up being pleasantly surprised. Chan, Karceski, and Lakonishok (2003) provided some evidence of the existence of extrapolative biases in the pricing of value and glamour stocks. The common presumption is that BV/MV is a measure of a company's future growth opportunities relative to its accounting value. Accordingly, low BV/MV suggests that investors expect high future growth prospects compared with the value of asset in place

If these expectations are correct, a negative association should exist between BV/MV and future realized growth. To check whether BV/MV predicts future growth, the authors ranked stocks by growth in income before extraordinary items over a five-year horizon (only stocks

with positive income in the base year entered the sample). Based on the ranking, stocks were placed in 1 of 10 deciles. Within each decile, the authors found the median BV/MV at the beginning of the five-year horizon and also at the end. The procedure was repeated at the beginning of each year from 1951 to 1998.

Chan, Karceski, and Lakonishok (2003) found that the association between BV/MV and future growth was weak. The stocks ranked in the top deciles by growth in net income typically had a BV/MV of 0.88 at the beginning, which was higher than the average BV/MV for all stocks (0.69). So, investors are not anticipating these companies' future success. Typically, then, stocks fetching high prices relative to book value or earnings wind up falling short of investors' hopes. Nevertheless, Chan, Karceski, and Lakonishok found that ex post BV/MV tracked growth closely, showing that investors are quick to jump on the bandwagon and chase stocks with high past growth. After the period of high growth, the top deciles of companies traded at a BV/MV of 0.56 (the lowest across the deciles). Conversely, investors punished the companies with the lowest realized growth.

Still another position, argued by Black (1993) and MacKinlay (1995), is that the value premium is sample-specific. Its appearance in past U.S. returns is a chance result unlikely to recur in future returns. A standard check on this argument is to test for a value premium in other samples. This argument was tested by Davis (1994) who shows that there is a value premium in U.S. returns before 1963, the start date for the studies of Fama and French and others.

## **2.5 Empirical Studies done in Kenya**

Muhoro (2004) in his study, where portfolio were created on the bases of the breakpoint for the bottom 30% and top 30% of the ranked value of the BM. The mid 40% was assumed to consist of the grey area and hence stock falling under that range was ignored. The top 30 % (high B/M) value company were classified as value stocks and the bottom 30% (low BM) were classified as growth stocks such that at the formation date there were two growth portfolio each in respect of the single variable which was the BM (1998-2002)

Muhoro (2004) finding was that the weighted average monthly return for value stocks was 1.99 against 1.32 for growth stocks. The standard deviation for value stocks was 3.36 against 3.25 for growth stocks. A comparison of the two five year average monthly return for the two portfolio was done by performing tests of significance to determine whether there was significant difference between the average return of the two portfolio. At 0.05 level of

confidence, the critical Z 1.64 (for a one tail test) was tested. His result of 7.806 which is greater than 1.64 concluded that there exists a value premium at the NSE.

In exactly similar study and using the same methodologies Ngigi (2006) using the data for years 2000-2004 had different findings. The 5 year average monthly return for value stock was found to be 0.50 against 0.64 for growth stock and a standard deviation of 28.69 for value stocks against 26.96 for growth stocks. The critical Z was 0.10 against the 1.64 (for one tail test) which implies that there was no significant difference between the performance of growth and value stocks. In his analyses the value stocks had higher average monthly returns than growth stocks only in two years and in the other three years growth stocks had higher returns. The Critical Z value indicates that the difference is not statistically significant.

Oluoch (2004) in his study to test the small size effect at the Nairobi stock exchange findings indicate that the small firm do not consistently out perform or underperform the market. His period of study was from Jan 1994 to Dec 2003 and sampled 11 largest stocks 11 sized stocks and another 11 medium sized stock of companies listed at the NSE. The study found that the NSE does not exhibit the size anomaly. However Oluoch ( 2004) asserts that looking at the descriptive statistics small companies seems to have a higher mean return( but with a high standard deviation) when compared to the mean return of the large stock which nonetheless exhibit less volatility as shown by the corresponding lower standard deviation of the mean return. The findings indicate that the small firms do not consistently out perform or underperform the market. Large firms also perform in similar fashion. These findings contradict the findings by Ndungu (2003) who found out that for the period 1996-2002 the smallest portfolio did weakly outperform the largest portfolio in all the years under consideration.

Marangu (2004) in his study aimed at establishing the relationship between price-to-book value ratio and divided payout ratio, return on total assets, return on equity, return per share, divided per share and growth rate of earning after tax for companies quoted at the NSE. The study established a statistically significant relationship between the market to book ratio and divided payout ratio, return on total assets, return on equity, return per share, divided per share and growth rate of earning after tax for the period 1991 through to 2003 for companies that constitute the NSE. His study implies that managers of firms can control return of total assets, return on equity and divided per share to influence the price to book value ratio of their firms. Marangu (2004) asserts that any adverse movement in return of total asset return, return on equity and divided per share will adversely affect the price to book value ratio and thus affecting the value of investment.



## 2.5 Cross- Sectional Regression

Fama and French (1992) uses the month by month Fama-Macbeth (FM) regression of the cross-section of stock returns on size,  $\beta$  and the other variables (leverage, EP, and book-to-market equity) used to explain average returns. The average slopes provide standard FM test for determining which explanatory variables on average have non-zero expected premiums during the July 1963 to Dec 1990 period. They find that size;  $\ln(ME)$  helps explain the cross section of average stock returns. The average slope from the monthly regression of returns on size alone is -0.15%, with a t-statistic of -2.58. This reliable negative relation persists which other explanatory variable are in the regression. This implies that size effects (small stocks have higher average returns) are robust in the 1963-1990 returns of NYSE, Amex and NASDAQ stocks.

Fama and French(1992) finds that in contrast to the consistent explanatory power of size, the FM regression, show that market  $\beta$  does not help explain average stock returns for 1963-1990. Their finding indicates that the average slope from the regression of returns on  $\beta$  alone is 0.15% per month and only 0.46 standard errors from 0. In the regression of returns on size and  $\beta$ , size has explanatory power (an average slopes -3.41) standard errors from 0. They find a strong positive relation between average return and book-to-market equity. Average return rise from 0.30 for the lowest BE/ME portfolio to 1.83% for the highest, difference of 0.74% between the average monthly return on the smallest and largest size portfolios.

Fama and French (1992) FM regression confirm the importance of book-to-market equity in explaining the cross-section of average stock returns. The average slope from the monthly regression of returns on  $\ln(\frac{BE}{ME})$  alone is 0.50%, with a statistic of 5.71. This book-to-market relation is stronger than the size effect which produces a t-statistic of -2.58 in the regression of returns on  $\ln(ME)$  alone. But book-to-market equity does not replace size in explaining average returns. When both  $\ln(ME)$  and  $\ln(\frac{BE}{ME})$  are included in the regression, the average size slope is still -1.99 standard errors from 0; the book-to-market slope is an impressive 4.44 standard errors from 0.

Loughran (1997) study report a size and BE/ME effect during July 1963 to Dec 1990 with an average coefficient on size of -0.10(t statistic of -1.80) and 0.35(t statistic of 4.49) for BE/ME. The average BE/ME coefficient of 0.35 implies, that all else being equal, a firm with a BE/ME ratio of 1.0 will have annual returns of 5.0% per year higher than a firm with

BE/ME ratio of 0.3. Loughran (1997) also examine the BE/ME pattern across the dimension of exchange listing and calendar seasonality. The average coefficient on BE/ME during January for the sample of all firms 0.63(t-statistic of 2-03). For the combined sample and each individual exchange there is strong size effect. The BE/ME patterns in January are however quite different across exchange. For NYSE firms the average coefficient on the book-to-market ratio is 1.98 (t statistic of 6.16). The BE/ME coefficient for NYSE firm is positive in 27 of the 32 January for NYSE firms. For Amex, all Nasdaq firms, there is no significant book-to-market effect in the month of January.

Consistent with the strong BE/ME coefficient for NYSE firms is the Ritter and Chopra (1989) behavioural explanation for high January returns. They find that small NYSE firms have positive average returns in January regardless of whether or not the value-weighted index return was positive. They argue that this fact is consistent with a portfolio rebalancing hypothesis. As investors rebalance their portfolio in early January following the Dec. Tax loss selling value stocks encounter a rise in price.

Loughran (1997) finds that in the 358 non January months, the BE/ME effect is strong for the overall sample of firms. The average coefficient on BE/ME during Feb. through December is 0.31(t statistics of 4.42) and this implies that a firm with a BE/ME ratio of 1.0 will have monthly return all else being equal 37 basis points higher than a firm with a BE/ME ratio of 0.3 . This is consistent with Keim (1988) results. He reports a strong January seasonal BE/ME effects for NYSE firms over the 1984-1982 period. Since he restricted his sample to just NYSE firms no book-to-market effect was observed in his sample outside of January.

## **2.6 Summary of the Literature Review**

In analysing the study currently done on the area of value premium strategy it's evident from majority of the study that there is an inverse relationship between firm size and Book-to market ratio. This has an implication that value premium for small capitalised companies are higher than that of large capitalised firms. Most of the studies were conducted in developed capital market except that done by Gonene and Koran (2003), on the Istanbul stock exchange which is an emerging market. The study on emerging markets by Fama and French (1998) include only two African countries; that is Nigeria and Zimbabwe. In all the studies except of that Gonene and Koran (2003), there is consensus that the Value stock has superior performance. This has persuaded most scholars to conclude that the size and ratio of Book value-to Market value (the ratio that has been used to distinguish between value and growth stock) provide a simple and powerful characterisation of the cross section of average returns.

This is a drift from the previous thinking that has given a lot of weight to the beta as the single variable that explain the cross sectional returns.

As the debate on size and Book value-to-market value ranges, scholars are yet to unveil the theories explaining the value premium, with one school of thought comprising Lakonishok et al (1994) and Haugen (1995) suggesting that the value premium in average returns arises because the market under-values distressed stocks and overvalues growth stocks. Others like Fama and French (1993, 1995, and 1996) argue that the value premium is compensation for risks missed by the capital asset pricing model (CAPM) of Sharpe (1964). Another explanation by Chan et al (2000) has drawn on behavioural consideration. They have suggested that individuals tend to use heuristics for decision making which opens up the possibility of judgemental biases in investment behaviour.

In most of the study done in the developed countries, an emerging consensus is that superiority of value stocks over growth stock may be influenced by the firm size effect. Arshanapalli et al (1998) finds that the superior performance of value stocks is positively and significantly associated with the firm size variable (small-large) in most countries. Fama and French (1992) confirm that the return on small and large capitalization portfolios suggest that there is an important size effect. Finally Loughran (1997), finds that size and book-to-market effect explain none of the cross sectional variations in returns for the largest firms. Loughran (1997) concludes that the book-to-market pattern for large firms does not simply exist and as such has less importance to money managers than the literature has led us to believe.

While the study in the outside world has been extensive here in Kenya the study so far carried out are not conclusive. Muhoro (2004) and Ngigi (2004) give different reports on existence or in existence of value premium. Both studies used the same methodology in portfolio formation as used by Fama and French (1992). While (Ngigi 2006) established the existence of a weak value premium, (Muhoro 2004) findings was that no value premium was found to exist in the NSE. The two studies however, did not classify firms in terms of size and thus establish whether value premium differs with size of the firm (large vs. small cap).

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.0 Research Design

Frankfort and Nachmias (1996) define research design as the program that guides the investigator in the process of collecting, analyzing and interpreting observation. It is a logical model of proof that guides the investigator in the various stages of the research.

This study was conducted through a quantitative research design. According to Creswell, J. N., (2009) quantitative research is a means of testing objective theories by examining the relationship among variables.

#### 3.1. The Population

The population of interest in this study consisted of all the listed companies at the Nairobi Stock Exchange. There were 54 listed companies at the Nairobi Stock Exchange. (Source: Nairobi Stock Exchange market report publication in December 2008).

#### 3.2 Sampling

The sample included all common stocks at the Nairobi stock exchange. This was for various reasons. For one, the first step in the data analyses required that all the quoted companies are included to facilitate categorisation into growth and value stocks. Secondly, the total population was small (54 companies). And it was therefore feasible to deal with all of them. Lastly, the data required was collected from a central place- the Nairobi stock Exchange.

#### 3.3 Data Collection

Secondary data from Nairobi Stock Exchange was used. Annual data availed by the stock exchange includes the P/E ratio, dividend yield, the price to book value ratio, as well as the dividend per share. Data on closing share price, shares outstanding, and book equity, monthly average returns on share prices was obtained for the years starting 2004 all through to 2008.

The following ratios can be used as proxy to value premium; B/M, E/P and C/P. However in this study, both B/M and E/P ratio was used. This is because it was easier to calculate the two ratios because they are provided in the NSE reports. Most of the studies that has been done on Value Premium, Fama and French (1992, 1993, and 1996), Loghrun( 1997), Lokonishok, Shleifer and Vishey( 1994) and Kothari, Shanken and Sloan (1995) have used these ratios and thus convenient for comparison purposes.

### **3.4 Data Analysis and Presentation**

An analysis of the data was done using Excel. The first step in the analyses was creation of portfolios based on size and BE/ME ratios. Descriptive statistics was used to analyze the mean average weighted stock returns of the six portfolios formed. The population was assumed to be normally distributed and thus Z statistic was used in analyses of variances to test whether there was significance difference between the average returns of the various portfolios. All tests were conducted at 0.05 significant levels to ensure high levels of accuracy.

## CHAPTER FOUR

### DATA ANALYSIS AND FINDINGS

#### 4.0 Introduction

This chapter deals with data analyses and interpretation of the research findings. The data in this study was summarized in the form weighted average returns, rank ordering and standard deviation and Presentation was made through tables and graphs. The data was analyzed through creation of portfolios which were first categorized on the bases of size in order to differentiate between small cap firms from large cap firms. Secondly portfolios were created based on the size of B/M and E/P ratios to categorize stocks as either growth or value stocks. The chapter is divided in into two sections. The first section explains how portfolios were formed and analyses done. The second section deals with explanation of findings

#### 4.1 Portfolio Formation and Analyses

At the end of the year from 2004 to 2008 six portfolios were created based on size (market capitalization i.e. price times shares outstanding, henceforth called market cap) and book-to-market equity (BM) and earning yield (E/P). NSE firms with positive book equity were sorted into two size groups and three B/M and E/P groups. Firms below the NSE medium size were categorized as small(S) and those above were categorized as big (B). Firms were assigned to growth( G), neutral( N), and value( V) groups if their B/M and E/P is in the bottom 30%, middle 40%, or top 30% of NSE. The six portfolio, small, and big growth (SG and BG), small and big neutral (SN and BN), and small and big value (SV and BV), were the intersection of these sorts.

The size factor, SMB (small minus big), was got by calculating the simple average of the monthly returns on the three simple stock portfolio minus the average of the returns on the three big stock portfolio i.e.  $SMB = (SG+SN+SV)/3 - (BG+BN+BV)/3$ .

To test for the value premium, the value –growth factor, VMG (Value minus growth), was the simple average of the monthly returns on the two value portfolios minus the average of the returns on the two growth portfolios i.e.  $VMG = (SV+BV)/2 - (SG+BG)/2$ .

To test whether the value premium in average return is greater in small stocks, VMG was split into small stock and big stock components i.e.  $VMGS = SV-SG$  and  $VMGB = BV-BG$ .

The following formulae was used to calculate the monthly returns (Ri)

$$R_i = \frac{\text{dividends} + (\text{Ending Price} - \text{Beginning price})}{\text{beginning price}} \times 100$$

The average monthly return for each stock for the 5 years was calculated as follows;

$$\text{Average monthly return for stock } i \text{ at year } t = (R_{it}) = \frac{1}{12} \sum_{i=1}^{12} R_i$$

$$\text{Average monthly return for an equally weighted portfolio at year } t (R_{pt}) = \frac{1}{n} \sum_{t=1}^n R_{it}$$

Where n= number of stocks in a portfolio at year t

The average monthly return for each portfolio for each of the 5 years was calculated as follows;

$$5 \text{ year average monthly return} = \frac{1}{5} \sum_{t=1}^5 R_{pt}$$

Finally, a comparison of the 5 year average monthly returns for each pair of portfolios was done by performing tests of significance to determine whether there was a significant difference between the average returns of each pair. First the standard deviation for each portfolio was calculated as follows;

$$\text{Standard deviation for each portfolio } S = \sqrt{\frac{\sum (X - \bar{X})^2}{n}}$$

Then the z statistic was calculated as follows;

$$Z = \frac{X_1 - X_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

Where  $X_1$  = 5 year average monthly return for small Cap. Value portfolio

$X_2$  = 5 years average monthly return for the big cap. Value portfolio

$S_1$  = standard deviation of the small cap. Value portfolio

$S_2$  = standard deviation of big cap. Value portfolio

$n_1 = n_2$  = equal no stocks per each of the two portfolios times 12 months times 5 years.

## 4.2 Value vs. Growth stocks

Table 4.2 (a) Value vs. Growth stocks based on B/M ratio

Year	2004	2005	2006	2007	2008	Av. wgt. Returns	Std.dev
Value stocks	5.16	6.74	2.88	-1.42	-2.71	2.13	4.09
Growth stocks	0.88	4.71	4.97	-0.04	-2.4	1.62	3.17

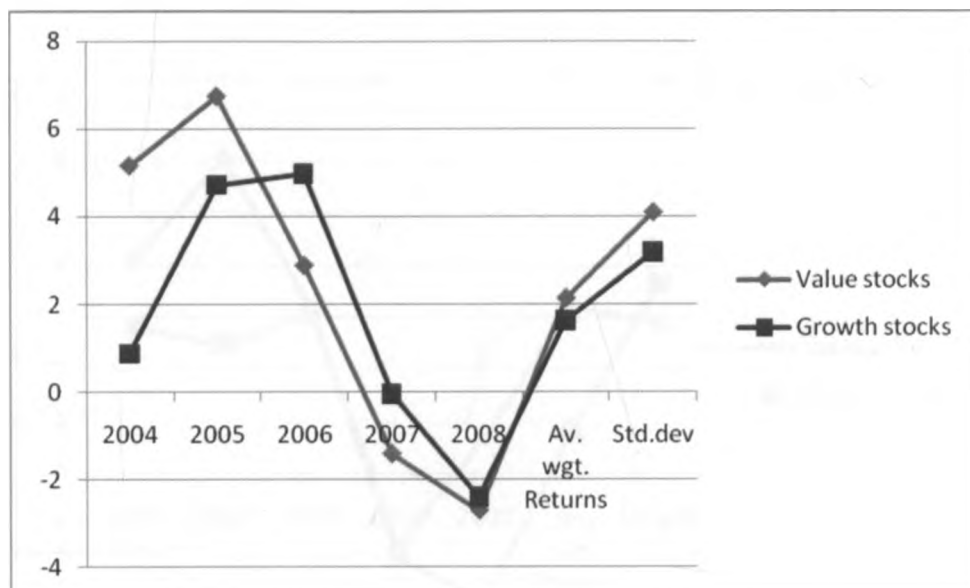


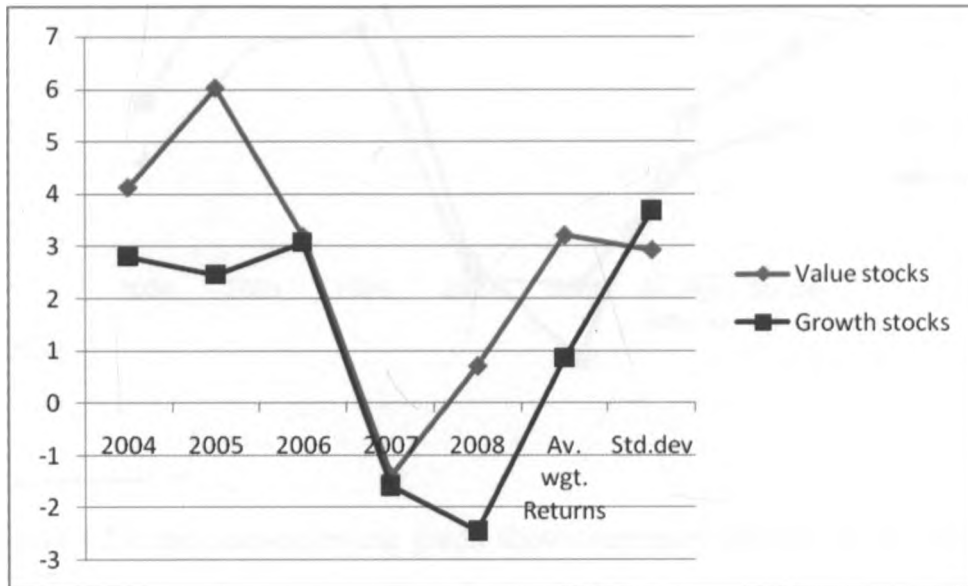
Table 4.2(a) and accompanying graph shows the summary statistic for the performance of value and growth stocks at the NSE for the period between 2004 and 2008 based on the B/M ratios. The weighted average annual return for value stocks is 2.13% against 1.62% for growth stocks registering a value premium of 0.5%. A comparison of the two five year average returns for the two portfolios is done by performing tests of significance to determine whether there is significant difference between the average return of the two portfolios. At 0.05 level of confidence the critical Z 1.64 (for one tail test) was tested. The result of 1.71 which is greater than 1.64 concludes that there exists a value premium at the stock exchange. However it's important to note that out of the 5 years growth stock performed better than growth in 3 of the 5 years under study but out of the three years the average returns for both growth and value stocks was negative for 2007 and 2008 and therefore did not make any significant difference in the average return. This has also the implication to suggest that



growth stocks seems to have performed unusually better in the two years of 2007 and 2008 when the general NSE market share performance was poor.

Table 4.2 (b) Value vs. Growth stocks based on E/P

Year	2004	2005	2006	2007	2008	Av. wgt. Returns	Std.dev
Value stocks	4.13	6.03	3.19	-1.39	0.71	3.21	2.93
Growth stocks	2.81	2.47	3.08	-1.57	-2.44	0.87	3.69



In evaluating the portfolios based on earning yield E/P (table 4.2( b) show the weighted average return for value stocks is 3.21% with a std. deviation of 2.93 against 0.87 for growth stocks with a std. deviation of 3.69. At 0.05 level of confidence the critical Z of 1.65 (for one tailed test) is tested. The result of 7.2 which is more than 1.65 confirms the existence of value premium of 2.34 % monthly return.

### 4.2.1 Small Cap vs. Large Cap stocks

Table 4.2.1 large vs. Small cap firms

Year	2004	2005	2006	2007	2008	Av. Wgt. Returns	Std.dev.
Small	1.62	3.85	4.15	-0.58	-0.76	1.66	2.34
Big	2.77	6.11	6.08	-0.3	-2.16	2.5	3.72

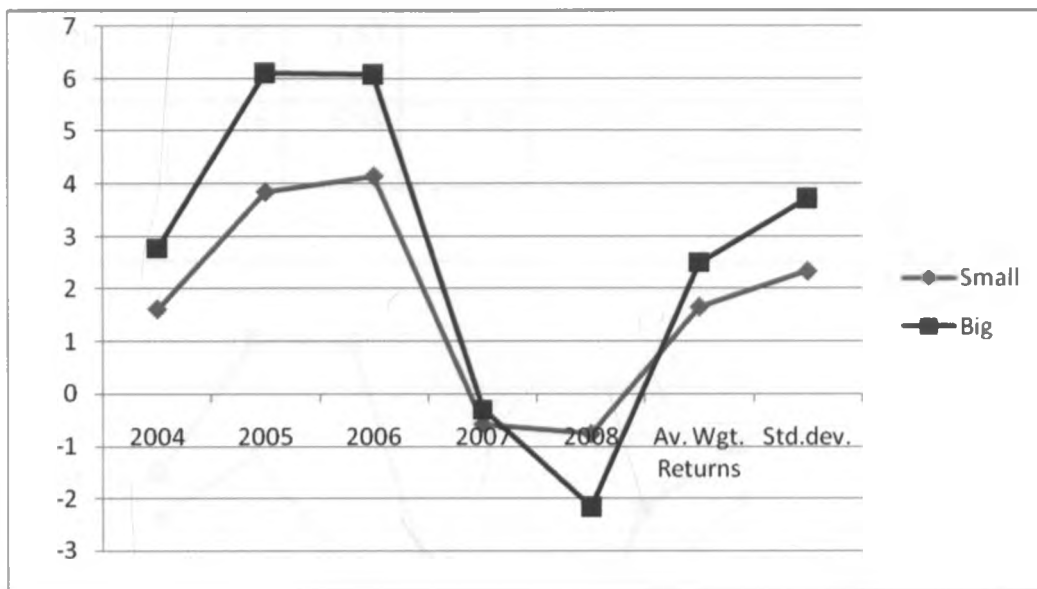


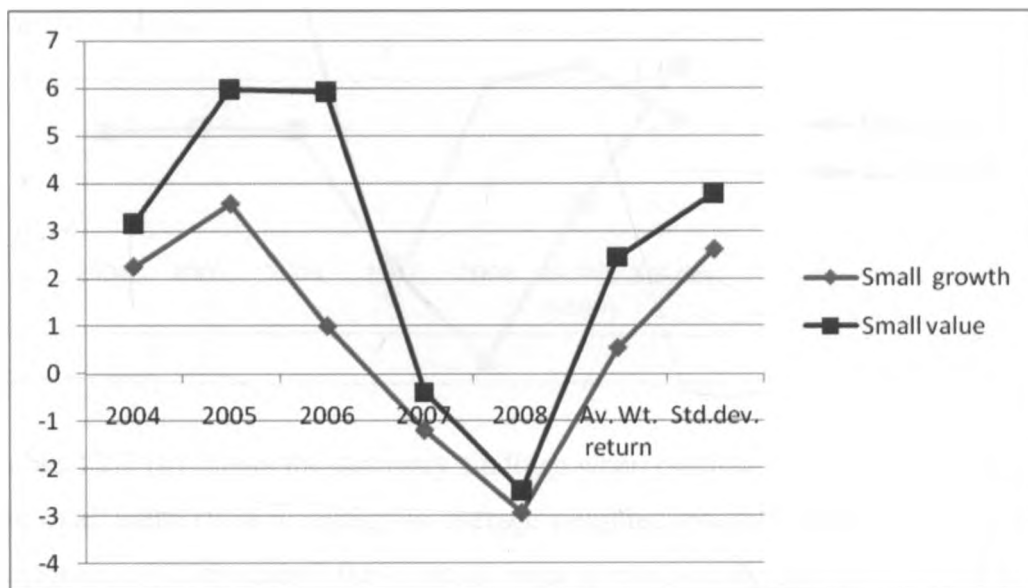
Table 4.2.1 and accompanying graph shows summary statistic on the size factor, based on portfolios formed on bases of market capitalisation, large capitalised firms registers high average returns. Large capitalised firm's registers monthly average weighted return of 2.50% with a standard deviation of 3.72 against 1.66% and standard deviation of 2.93. A comparison of the two five year average returns for the two portfolios is done by performing tests of significance to determine whether there is significant difference between the average return of the two portfolios. At 0.05 level of confidence the critical Z 1.64 (for one tail test) was tested. The result of 3.91 which is greater than 1.64 concludes that large capitalised firms perform better than small capitalised firms at the NSE stock exchange. This is in contrast to evidence from developed market, which is that small cap stocks tend to have higher average returns than large cap stocks. This result however should not be surprising for an emerging market. Fama and French (1988) show that small stocks have higher average returns than large stocks in 11 of 16 emerging markets. In 5 of 16 emerging markets, large cap stocks earn

more than small cap stocks. Similar findings by Gonene and Karan (2003) report a difference of 6.77% in average return between large cap and small cap in favour of large cap stocks

#### 4.2.2 Small Value vs. Small Growth stocks

Table 4.2.2(a) small value vs. Small growth based on B/M ratio

Year	2004	2005	2006	2007	2008	Av. Wt. Return	Std.dev.
Small growth	2.25	3.57	1	-1.19	-2.93	0.54	2.61
Small value	3.16	5.98	5.92	-0.39	-2.47	2.44	3.78



To assess the effect of size on value premium table 4.2.2(a) and accompanying graph shows a summary report of annual weighted returns on portfolios created based on the size (large Vs. Small cap) and evaluated on the bases of both B/M ratio and E/P. Based on B/M ratio the weighted annual returns for small value outperform small growth for all the years under study. The average weighted return for small growth is 0.54% with a standard deviation of 2.61 against 2.44% with a standard deviation of 3.78 for small value stock. At 0.05 level of confidence the critical Z (1.64) was tested. The result of 3.658 which is greater than 1.64

confirms that the average returns of small value is substantially greater than small growth stocks with an average annual return difference of 1.9%.

Table 4.2.2 (b) small value vs. Small growth based on E/P

Year	2004	2005	2006	2007	2008	Av. Wt. Return	Std.dev.
Small value	4.95	4.84	5.03	-1.24	2.95	3.31	2.26
Small growth	1.97	2.04	2	-0.66	-2.57	0.6	3.33

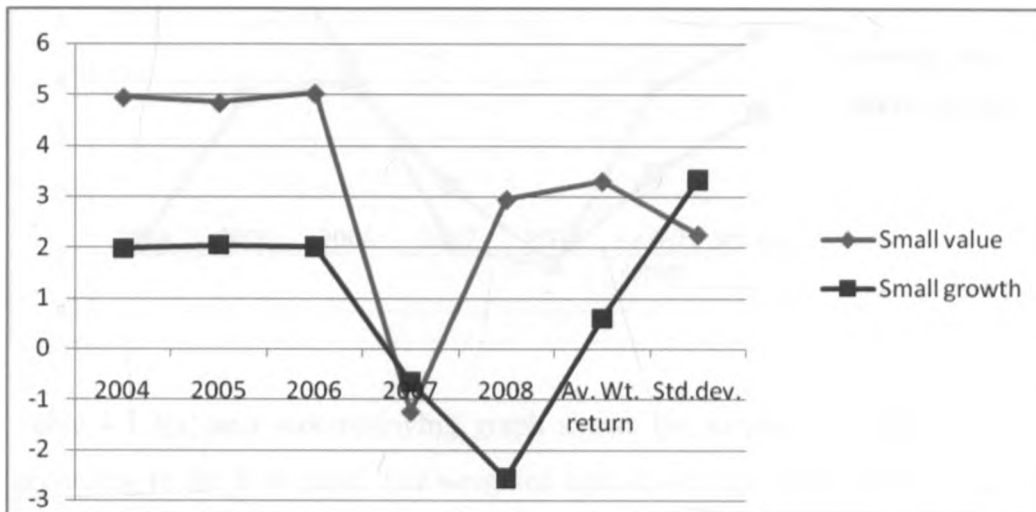


Table 4.2.2 (b) shows the summary findings when portfolios are analysed based on E/P with the small value stock recording an average weighted monthly return of 3.31% with a standard deviation of 2.26 against 0.6% return with a standard deviation of 3.33 for small growth stocks. At 0.05 level of confidence the critical Z (1.64) was tested. The result of 13.81 which is greater than 1.64 confirms that the weighted average returns of small value is substantially greater than small growth stocks.

### 4.2.3 Big Value vs. Big Growth

Table 4.2.3 (a) Big Value VS Big growth based on B/M ratio

Year	2004	2005	2006	2007	2008	Av. Wt. Return	Std.dev.
Big value	8.07	9.9	4.75	-1.65	-2.48	3.72	5.6
Big growth	-1.41	3.44	4.01	0.32	-2.33	0.81	2.84

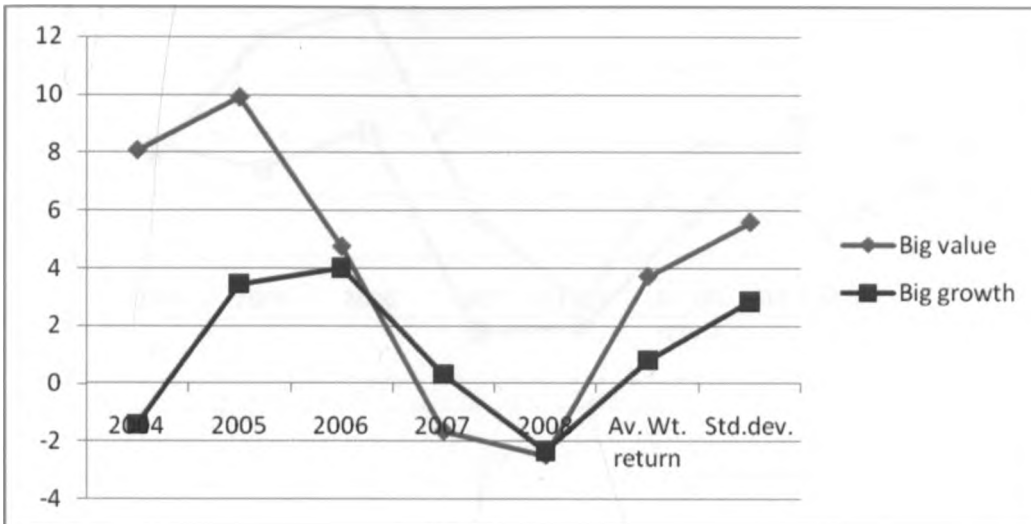


Table 4.2.3(a) and accompanying graph shows the summary results of portfolios arranged according to the B/M ratio. The weighted annual average return of big value stocks is 3.72% with a standard deviation of 5.6 compared to 0.81% with a standard deviation of 2.84 for big growth. This implies a value premium of 2.91 for large cap stocks. At 0.05 level of confidence the critical Z (1.64) was tested. The result of 3.31 which is greater than 1.64 confirms that the value premium is significant and can thus be concluded that the NSE exhibit a value premium for large capitalised firms of 2.91%

Table 4.2.3(b) Big Value VS Big growth based on E/P ratio

Year	2004	2005	2006	2007	2008	Av. Wt. Return	Std.dev.
Big value	3.3	7.21	8.09	1.24	-1.53	3.66	3.53
Big growth	3.65	2.89	4.15	-2.48	-2.3	1.18	4.24

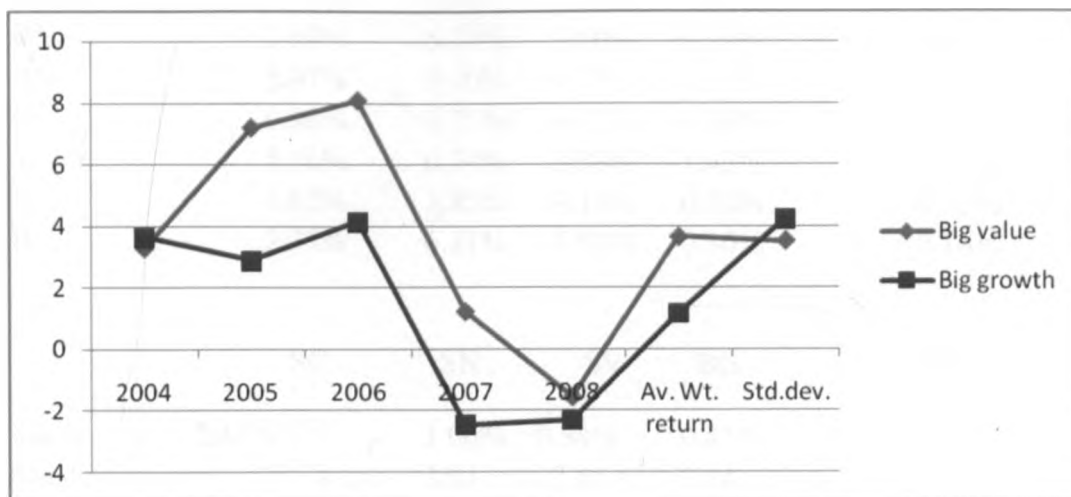


Table 4.2.3(b) and accompanying graph shows summary results of performance of portfolios of big value vs. big growth stocks when portfolios are analysed based on E/P with the big value stock recording an average weighted monthly return of 3.66% with a standard deviation of 3.53 against 1.18% return with a standard deviation of 4.24 for big growth stocks. At 0.05 level of confidence the critical Z (1.64) was tested. The result of 11.81 which is greater than 1.64 confirms that the weighted average returns of big value stocks is substantially greater than big growth stocks

#### 4.2.4 Size –B/M ratio

Table 4.2.4 Size-B/M portfolios

Years	2004	2005	2006	2007	2008	Average Returns	std dev.
SV	3.16%	5.98%	5.92%	-0.39%	-2.47%	2.44%	3.78
SN	0.22%	2%	5.48%	0.05%	-2.77%	1.00%	3.03
SG	2.25%	3.57%	1%	-1.19%	-2.93%	0.54%	2.61
BG	-1.41%	3.44%	4.01%	0.32%	-2.33%	0.81%	2.84
BN	1.89%	5.39%	5.60%	0.39%	-1.45%	2.36%	3.09
BV	8.07%	9.90%	4.75%	-1.65%	-2.48%	3.72%	5.60
G	0.88%	4.71%	4.97%	-0.04%	-2.40%	1.62%	3.17
V	5.16%	6.74%	2.88%	-1.42%	-2.71%	2.13%	4.09
S	1.62%	3.85%	4.15%	-0.58%	-0.76%	1.66%	2.34
B	2.77%	6.11%	6.08%	-0.30%	-2.16%	2.50%	3.72
	SG	SN	SV	BG	BN		
Mean	2.44%	1.00%	0.54%	0.81%	2.36%	3.72%	
Std dev.	3.78	3.03	2.61	2.84	3.09	5.6	
	SMB	VMG	VMGS	VMGB	VMGS-B		
	-0.84%	0.50500%	1.90%	2.91%	-1.01%		
z statistic	3.91	1.71	3.658	3.31	3.93		

Table 4.2.4(a) shows a summary report for the whole period under study of size-B/M portfolios. To test whether the value premium for small cap stocks is greater than for large capitalised firms the difference between small value stocks and small growth stocks (VMGS) is compared with the difference in average returns between big value stocks and big growth stocks (VMGB). A negative premium of 1.01% is realised implying that the value premium for large capitalised firms is greater than for small capitalised firms. At 0.05 level of confidence the critical Z (1.64) was tested. The result of 3.93 which is greater than 1.64 confirms that the value premium for large cap firms is substantially large than for small cap firms and thus can be concluded that at the NSE the value premium for large cap firms is substantially greater than that of small cap firms based on portfolios categorised on the bases of B/M ratio.

## 4.2.5 Size -E/P ratio

### 4.4 b Size –E/P portfolios

Years	2004	2005	2006	2007	2008	Average Returns	std. dev
SV	4.95%	4.84%	5.03%	-1.24%	2.95%	3.31%	2.26%
SN	-2.04%	5%	5.18%	0.17%	-2.67%	1.06%	3.69%
SG	1.97%	2.04%	2%	-0.66%	-2.57%	0.60%	3.33%
BV	3.30%	7.21%	8.09%	1.24%	-1.53%	3.66%	3.53%
BN	1.38%	8.23%	6.02%	0.34%	-2.67%	2.66%	4.40%
BG	3.65%	2.89%	4.15%	-2.48%	-2.30%	1.18%	4.24%
V	4.13%	6.03%	6.56%	-1.39%	0.71%	3.21%	2.93%
G	2.81%	2.47%	3.08%	-1.57%	-2.44%	0.87%	3.69%
S	1.62%	3.85%	4.15%	-0.58%	-0.76%	1.66%	2.34%
B	2.77%	6.11%	6.08%	-0.30%	-2.16%	2.50%	3.72%

		SV	SN	SG	BV	BN	BG
Mean	3.31%		1.06%	0.60%	3.66%	2.66%	1.66%
Std dev.		2.26	3.69	3.33	3.53	4.4	4.24

	SMB	VMG	VMGS	VMGB	VMGS-B
Z statistic	-0.84%	2.340%	2.71%	2.48%	-0.23%
	3.91	7.2	13.81	11.99	0.98

Table 4.2.5 shows that when E/P ratio is used to differentiate value from growth stocks the small cap stocks report a value premium of 2.71% against 2.48 % for large cap firms. This implies that based on the E/P ratio the value premium for small firms is greater than that of large capitalised firm by a difference in annual return of 0.23%. At 0.05 level of confidence the critical Z (1.64) was tested. The resulting figure of 0.98 which is less than 1.64 confirms that this difference is not substantial and can thus be concluded that based on E/P ratio there is no substantial difference in value premium between large capitalised firms and small cap firms.



### CONCLUSIONS AND RECOMMENDATIONS

#### 5.0 Introduction

This chapter presents the summary, discussions and conclusions from the research findings as per the objective of the study. Based on the findings of this study recommendations have been given on value investment strategies and the effect of size on the NSE. The limitations of the study as well as suggestions for further research have also been discussed.

#### 5.1 Summary

The objective of the study was to establish the existence of value premium and the effect of size at the NSE based on the both B/M and E/P ratio. The result of the test conducted at 0.05 confidence level is that value premium was tested to exist based on both B/M and E/P ratio. Based on the B/M ratio a value premium of 0.5% per month was realised and based on E/P ratio a value premium of 2.34% monthly return was realised. This confirms the findings by Muhoro (2004) which tested a value premium of 0.64 for the period 1999-2002. The findings are also consistent with findings of the majority of studies done in developed market.

#### 5.2 Discussions

An interesting finding from the results is that for the years that the average weighted monthly returns was negative the difference of the returns between the value and growth stocks is very minimal implying that both the types of stocks are equally adversely affected by economic and political factors. This is evident in the two years of 2007 during the general election and 2008 when there was violence after elections. The performance is clearly different in those years when the market was experiencing a boom especially in 2004 and 2005. Value stock performs significantly better than growth stock as is reflected in table 4.2(a) and 4.2(b). This finding is contrary from that of Gonene and Karan (2003) done in the Istanbul which concluded that the average return on value and growth portfolios are not sensitive to market movement. The opposite can be said of NSE.

In the analyses of the effect of size on the value premium, the findings of this study is that the value premium for large cap firms is greater than that of small cap firms by a monthly weighted return of 1.01% when portfolios are categorised according to the B/M ratio. However when portfolios are arranged according to the E/P ratio there is no significant difference between the two types of stocks even though small cap firms appear to perform better with a difference of 0.23 monthly weighted over the period of the study. .

### **5.3 Conclusions**

The conclusion of these findings is that small value stocks perform better than the large value stock when portfolios are ranked according P/E ratio as compared to when they sorted out based on B/M ratio. The difference is however very small to be significant and fails the 0.5 confidence level. We are therefore left with one conclusion that at the NSE large capitalised firms register higher value premium than small cap firms.

This is in contrast to the findings by Loghran (1997) whose findings indicated that the value premium for small capitalised firms was substantially greater than that of large cap firms in the three stock exchanges of NYSE, AMEX and NASDAQ. In his study portfolios were arranged according to the B/M ratio. His findings was that the B/M effect for large cap firms was found not to be significant which led him to conclude that the value premium was being driven by the small capitalised firms. His findings are not reflected at the NSE and the findings give a different picture. However this study finding are consistent with the prior findings that the weighted average monthly return of large capitalised firms is substantially higher than those of the small capitalised firms at the NSE.

### **5.4 Recommendations**

The researcher recommends that investors using value investment strategies need to be aware that size is a major factor in determining the expected returns from either value or growth stocks. Over the period of study large capitalised firms earned a higher value premium than small capitalised stock. These findings are also supported by the fact that during the same period large capitalised firms recorded higher monthly returns than the small cap firms. During the period covered by the study value stock outperformed the growth stocks and therefore for those investors whose objective is higher earnings in the long run period then value stocks may be the ideal investment. However if depressed economic market situation is expected value stocks are affected more than growth stocks and comparatively there is no major difference in returns between the two types of stock. In respect to a period of boom the value stocks perform better than growth stocks.

### **5.5 Limitations of the Study**

*Period of the study* This study covered the period between 2004 and 2008 which is a relatively short period of study. The researcher was limited by time and financial constraints and could not cover a relatively longer period. In addition this period in Kenya covers two extremes periods in terms of economic situation. Between 2004 and 2006 it was a period

characterised by high growth rate and the period between 2006 and 2007 was a pre-election period and 2008 was post-election violence period. These extreme circumstances may have adversely affected the results.

*Annual data was used to compute the average returns.* This was due to limitation of data of relatively shorter period of time. The averaging of annual data to monthly average may not give very accurate results.

*Different annual reporting period of companies quoted at the stock exchange.* This made the researcher to assume the reporting period of all the company to be 31<sup>st</sup> Dec for uniformity of results. This may have an effect in the accuracy of the findings.

4. *Lack of compiled data especially for the year 2008.* This forced the researcher to look for individual firms reports to get the details. This ended up consuming a lot of time

## **5.6 Suggestion for Future Research**

As mentioned above our study period was limited by the time available and financial resources otherwise a longer period preferably not less than 10 years of study is preferable to get more reliable findings.

Another area of study recommended is testing of the models behind value premium and their applicability in the Kenyan market, of particular interest would be the Fama and French (1996) Multifactor model. This study findings suggest that there could be structural differences between the NSE and other stock market from developed countries hence the need to test whether such models developed based on findings from developed market actually apply in emerging markets like the NSE.

Future research should also attempt to test whether CAPM explains Value Premium at the NSE and whether value premium differs across the industry type. Such a study should establish whether the excess returns of value stocks over growth stocks can be explained by the CAPM and whether significant difference exist between value premium of Industrial, financial and other service industries. This study finding indicates that value premium varies across size at the NSE and it is also therefore possible for value premium to differ across the various types of industries.

Another related area of study would be to establish whether the firms in Kenya actually apply value investment strategies in portfolio management and possibly the most preferred stocks in Kenya between value and growth stocks.

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## APPENDICES

### Appendix A: Large vs. Small cap stocks 2004

#### Large cap stocks 2004

					divided	Eps	A.M. R	P/B	Mak. Cap(millions)	E/p
<u>East African Breweries</u>	110.50*	-9.94	-8.99%	100.56	18	35.05	0.61	2.9	48,874,	
<u>Barclays Bank</u>	280.33	79.73	-28.44%	200.6	14	18.13	-1.95	3.27	40,743,	
<u>Bamburi Cement</u>	126	30.43	-24.15%	95.57	6.12	4.73	-1.60	2.69	34,481	
<u>Standard Chartered Bank</u>	191	69.13	-36.19%	121.88	6.5	6.74	-2.73	5.47	33,180,	
<u>British American Tobacco Kenya</u>	276	-76	-27.54%	200	16.5	12.1	-1.79	4.58	20,000,	
<u>Total Kenya</u>	39.69	-2.15	-5.42%	37.54	2.5	3.34	0.07	3.61	16,349,	0.
<u>Kenya Commercial Bank</u>	55.53	8.94	16.09%	64.47	2	3.94	1.64	1.49	12,774,	0.
<u>Nation Media Group</u>	190.5	-20.5	-10.76%	170	6	11.99	-0.63	3.17	9,091,	0.
<u>CFC Stanbic Holdings 5.00</u>	33	24.75	75.00%	57.75	0.84	4.62	6.46	1.44	8,352,	0.
<u>Kenya Power &amp; Lighting</u>	56.8	37.14	65.38%	93.94	0	5.79	5.44	0.29	7,002,	
<u>Kenya Oil Co</u>	380	316.5	-83.29%	63.5	2	8.32		1.38	5,090,	
<u>Mumias Sugar Co.</u>	4.54	6.19	136.34%	10.73	1.1	1.55	13.38	0.63	4,615,	
<u>Kenya Airways</u>	8.7	8.21	94.41%	16.91	0.75	2.82	8.58	0.2	4,431,	
<u>E.A.Cables</u>	13.65	37.35	273.63%	51	1.75	-2.99	23.87	1.02	4,275,	

<u>E.A.Portland Cement</u>	58.25	12.25	-21.03%	46	1.75	-2.99	-1.502	0.67	4,275,
<u>NIC Bank</u>	45.5	4.25	9.34%	49.75	2.4	3.17	1.21	1.56	4,120,
<u>National Bank of Kenya</u>	13.1	5.36	40.89%	18.46	0	1.91	3.409	1.44	3,780,
<u>Centum Investment Company 0.50</u>	75.25	15.25	-20.27%	60	3	4.39	-1.35	1.21	3,684
<u>Diamond Trust Bank Kenya</u>	28	0	0.00%	28	0.7	<b>1.65</b>	0.208	1.94	2,782,

						divided	Eps	A.M. R	P/B	Cap	E/p
ini Tea Coffee	20	6.25	31.25%	26.25	3,800,835	2.5	20.29	3.64	0.21	779,	0.772
ango ntations	5.65	4.35	76.99%	10	7,569,753	0.8	2.14	7.59	0.73	570,	0.214
& neral (K)	9.75	5.25	53.85%	15	112,805	0.67	1.64	5.05	0.78	334,	0.1093
uzi	24	16	66.67%	40	3,385,879	1	4.27	5.90	0.44	783,	0.106
marshalls (A.)	8.8	6.2	70.45%	15	515,485	0	1.55	5.87	1.12	251,	0.103
Africa urance dings	23.5	-2.5	-10.64%	21	4,641,915	1	1.95	-0.53	1.26	1,008,	0.0928
IC dings	82	-22	-26.83%	60	5,252,758	1	5.42	-2.13	0.84	2,670,	0.090
Anchorua Co.	105	-5	-4.76%	100	14,560	3.75	8.9	-0.09	0.6	535,	0.089
River ing	21.55	-6.55	-30.39%	15	14,068,306	0	1.26	-2.5	1.02	1,395,	0.084
own rger	35.63	-7.63	-21.40%	28	3,562,359	0	2.15	-1.78	1	664,	0.076
Williamson Kenya	83.75	16.25	19.40%	100	602,540	3.75	7.35	1.99	0.2	612,	0.0735
S tern ica	27.25	20	73.39%	47.25	1,169,493	1.1	3.37	6.45	1.29	1,827,	0.071
IC ya	142	-27	-19.01%	115	1,158,427	4.5	8.2	-1.32	2.23	2,674,	0.071
asing nce Co	12.05	-3.55	-29.46%	8.5	7,494,709	0	0.52	-2.45	0.87	977,	0.06
uru Tea	160	195	121.88%	355	95,520	15	16.1	10.93	3.8	236,	0.045
Trust	30.5	19.5	63.93%	50	703,386	2.25	1.66	5.94	1.66	87,	0.03

Express	9	-1.2	-13.33%	7.8	5,342,679	0	0.14	-1.11	1.15	251,	0.017
Jubilee Insurance Co.	50	8	16.00%	58	1,473,123	2.5		1.75	7.68	2,088,	0
Magads	18	-1	-5.56%	17	2,350	0	-0.18	-0.462	0.73	136,	-0.01
Baumann Co.Ltd	8	0	0.00%	8	302,105	0	-0.63	0	0.07	21,	-0.
Anga Group	17.39	-6.79	-39.04%	10.6	5,373,746	0	-1.62	-3.25	0.43	914,	-0.

Small cap stocks 2004

**Appendix B: Large VS Small cap Stocks 2005**

Large Cap stocks 2005

Stock	Start Price	Gain	% Gain	End Price	Shares traded	divided	Eps	A.M. R	P/B	Mak. Cap(mill)
Jubilee Insurance Co.	58	25	43.10%	83	1,404,272	4	15	4.166667	1.14	2
Kenya Power & Lighting	93.94	44.06	46.91%	138	26,802,123	1.5	16.05	4.041587	0.35	8
National Bank of Kenya	18.46	10.29	55.77%	28.75	24,642,274	0	2.99	4.645179	1.78	5
Kenya Airways	16.91	65.09	384.82%	82	73,980,345	1.25	6.54	32.69269	0.36	11
Total Kenya	37.54	3.46	9.23%	41	12,314,543	2.5	3.07	1.323033	1.54	7
Centum Investment Company	60	12.5	20.83%	72.5	2,023,414	3	5.37	2.152778	0.93	3
Diamond Trust Bank Kenya	28	4.25	15.18%	32.25	7,907,379	0.7	2.37	1.473214	2.42	4
Mumias Sugar Co.	10.73	24.27	226.27%	35	281,717,411	1.5	2.53	20.01398	1.58	12
British American Tobacco Kenya	200	4	2.00%	204	5,262,647	12.5	13.82	0.6875	4.48	20
Kenya Oil Co	63.5	71.5	112.60%	135	11,058,597	2.25	9.09	9.678478	2.96	12

<u>Standard Chartered Bank</u>	121.88	17.13	14.05%	139	7,220,538	7.5	9.02	1.684033	3.94	37,
<u>NIC Bank</u>	49.75	2.75	5.53%	52.5	3,236,456	2.5	3.34	0.879397	1.51	4,
<u>E.A.Portland Cement</u>	46	64	139.13%	110	2,176,165	2.5	6.75	12.04	1.28	8,
<u>Kenya Commercial Bank</u>	64.47	48.53	75.27%	113	29,145,621	4	6.64	6.78	2.24	22
<u>Athi River Mining</u>	15	24.5	163.33%	39.5	20,208,444	0.75	2.15	14.02	1.35	3,
<u>East African Breweries</u>	100.56	34.44	34.24%	135	43,626,213	4.5	7.24	3.22	5.25	98,
<u>Nation Media Group</u>	170	20	11.76%	190	4,690,449	6	10.04	1.27	4.15	13,
<u>CFC Stanbic Holdings 5.00</u>	57.75	12.88	22.29%	70.63	2,517,151	0.84	3.54	1.97	2.94	11
<u>Bamburi Cement</u>	95.57	44.43	46.49%	140	7,079,841	5.3	5.94	4.33	3.76	50,
<u>Unilever Tea Kenya</u>	90.5	0	0.00%	90.5	651,577	2	1.38	0.18	1.08	4,
<u>Barclays Bank</u>	200.6	62.4	31.11%	263	11,576,717	14	2.41	3.17	30.92	407,
<u>TPS Eastern Africa</u>	47.25	33.75	71.43%	81	1,560,374	0.4	0.3	6.022	1.47	6,

#### Small cap stocks 2005

						divided	Eps	A.M. R	P/B	Mak. Cap( millions)
<u>Car &amp; General (K)</u>	15	8	53.33%	23	218,811	0.67	8.71	4.816	0.89	646,
<u>Olympia Capital Holdings Ltd</u>	15.85	0.15	0.95%	16	3,752,476	0	2.29	0.0788	0.72	158,
<u>CMC Holdings</u>	60	-6	-10.00%	54	20,434,904	1.5	7	-0.625	0.67	2,294,
<u>Express</u>	7.8	6	76.92%	13.8	16,431,918	0	1.68	6.41	1.51	444,
<u>Marshalls (E.A.)</u>	15	9.5	63.33%	24.5	593,814	0	2.95	5.27	0.46	215,

<u>Rea Vipingo Plantations</u>	10	10.75	107.50%	20.75	15,234,558	0.8	2.07	9.625	1.53	1,230,
<u>Pan Africa Insurance Holdings</u>	21	19.63	93.45%	40.63	7,336,696	1.2	3.68	8.26	2.06	1,920,
<u>Williamson Tea Kenya</u>	100	5	5.00%	105	554,875	3.75	9.18	0.729	0.23	700,
<u>E.A.Cables</u>	51	86	168.63%	137	3,308,362	5	10.52	14.86	4.38	2,774,
<u>B.O.C Kenya</u>	115	45	39.13%	160	563,160	5.5	10.62	3.65	2.14	2,831,
<u>Kapchorua Tea Co.</u>	100	54	54.00%	154	115,364	3.75	9.88	4.81	0.42	535,
<u>Unga Group</u>	10.6	8.4	79.25%	19	11,257,398	0	1.15	6.60	0.55	1,223,
<u>Eaagads</u>	17	0	0.00%	17	8,410	0	0.85	0	0.75	136,
<u>City Trust</u>	50	6	12.00%	56	1,206,584	6.25	2.64	2.041	0.61	124,
<u>Crown Berger</u>	28	7.98	28.49%	35.98	2,882,264	1	1.45	2.672	1.16	830,
<u>Housing Finance Co</u>	8.5	5.45	64.12%	13.95	23,677,168	0	0.51	5.34	1.26	1,604,
<u>Standard Group</u>	45	-5	-11.11%	40	1,877,582	0	1.12	-0.92	5.84	2,621,
<u>Limuru Tea Co.</u>	355	-8	-2.25%	347	82,634	5	-5.27	-0.07	4.51	236,
<u>Kakuzi</u>	40	8.25	20.63%	48.25	1,913,953	0	-3.76	1.72	0.65	945,
<u>A.Baumann &amp; Co.Ltd</u>	8	5.15	64.38%	13.15	129,452	0	-2.75	5.364	0.11	31,
<u>Sasini Tea &amp; Coffee</u>	26.25	0.5	1.90%	26.75	6,054,193	0	10.17	0.158	0.38	1,235,

## Appendix C: Large vs. Small cap stocks 2006

### Large Cap stocks

						Divide d	Eps	A.M. R	P/B	Mak. Cap( million s)	E/p
<u>Kenya Power &amp; Lighting</u>	138	84	60.87%	222	26,310,260	1.5	20.78	5.163	0.5	13,372,	0
<u>Jubilee Insurance Co.</u>	83	97	116.87%	180	950,708	4.25	15.54	10.16 5	3.22	11,628,	0
<u>Kenya Oil Co</u>	135	-32	-23.70%	103	5,761,105	2.25	8.29	-1.836	2.07	10,474,	0
<u>Kenya Airways</u>	82	49	59.76%	131	67,788,222	1.75	10.46	5.15	0.91	48,469,	0.0
<u>Total Kenya</u>	41	-4	-9.76%	37	15,543,880	2.5	2.81	-0.304	1.29	6,012,	0.07
<u>CMC Holdings</u>	54	65	120.37%	119	35,625,310	2.3	8.94	10.38	1.46	5,778,	0.07
<u>British American Tobacco Kenya</u>	204	-5	-2.45%	199	4,503,813	12.01	13.86	0.28	3.98	19,700,	0.0
<u>CFC Stanbic Holdings 5.00</u>	70.63	17.88	25.31%	88.5	2,390,910	1.9	6.03	2.33	2.47	13,884,	0.0

<u>E.A.Portland Cement</u>	110	20	18.18%	130	1,743,794	2.6	8.49	1.71	1.55	11,880,	0.06
<u>East African Breweries</u>	135	12	8.89%	147	25,705,722	7.7	9.31	1.216	4.43	91,598,	0.0
<u>Kenya Commercial Bank</u>	113	80	70.80%	193	37,290,986	6	12.18	6.34	4.14	48,103,	0.0
<u>NIC Bank</u>	52.5	46.5	88.57%	99	3,458,313	2.7	5.56	7.81	2.77	8,406,	0.0
<u>Mumias Sugar Co.</u>	35	20	57.14%	55	#####	1.75	2.99	5.17	3.21	31,620,	0.0
<u>National Bank of Kenya</u>	28.75	38.75	134.78%	67.5	29,963,036	0	3.12	11.23	3.01	11,600,	0.0
<u>Diamond Trust Bank Kenya</u>	32.25	46.75	144.96%	79	17,207,941	1	3.49	12.33	3.53	10,131,	0.0
<u>TPS Eastern Africa</u>	81	4	4.94%	85	4,638,647	1.25	3.7	0.54	1.42	7,773,	0.04
<u>Bamburi Cement</u>	140	44	31.43%	184	4,448,561	5.5	7.2	2.94	4.86	78,036,	0.03



<u>Athi River Mining</u>	39.5	52.5	132.91%	92	18,751,543
<u>E.A.Cables</u>	13.70	62.3	454.74%	76	17,424,904
<u>Barclays Bank</u>	263	75	28.52%	338	7,310,218
<u>Nation Media Group</u>	190	45	23.68%	235	4,035,449
<u>Sameer Africa</u>	21.5	-3.55	-16.51%	17.95	27,341,039

								11.28				
						1	2.84	692	2.43	7,719,	0.03	
						0.7	1.41	37.89	1.41	9,720,	0.0	
						1.65	3.31	2.42	7.04	104,55	0.0	
										7		
						12	0.98	2.5	5.79	22,318,	0.0	
						0	-0.08	-1.37	3.29	6,749,	-0.0	

<u>Kakuzi</u>	48.25	-6.25	-12.95%	42	1,268,793
<u>Car &amp; General (K)</u>	23	22.25	96.74%	45.25	1,722,707
<u>Williamson Tea Kenya</u>	105	-25	-23.81%	80	298,429
<u>Sasini Tea &amp; Coffee Express</u>	26.75	25.75	96.26%	52.5	7,350,518
	13.8	9.2	66.67%	23	13,395,185
<u>Kapchorua Tea Co.</u>	154	-74	-48.05%	80	13,190
<u>Olympia Capital Holdings Ltd</u>	16	-1.35	-8.44%	14.65	314,772
<u>Standard Group</u>	40	13	32.50%	53	1,991,675

						0	6.79	-1.07	0.49	828,	0.	
						1.48	6.09	8.59	1.13	1,008,	0.1	
						5	10.08	-1.58	0.34	1,042,	0.1	
						1	6.23	8.33	0.59	2,090,	0.	
						0.4	2.06	5.79	1.53	780,	0.	
						5	6.67	-3.73	0.42	535,	0.	
						0	1.14	-0.70	0.82	160,	0.0	
						0	3.96	2.70	5.84	4,331,	0.0	

<u>Rea Vipingo Plantations</u>	20.75	4.75	22.89%	25.5	9,788,581	0.8	1.88	2.22	1.86	1,530,	0.07
<u>Crown Berger</u>	35.98	1.02	2.84%	37	1,296,739	1.5	2.69	0.583	1.17	1,038,	0.07
<u>Marshalls (E.A.)</u>	24.5	18.5	75.51%	43	411,353	1	3.11	6.632	0.45	215,	0.07
<u>B.O.C Kenya</u>	160	0	0.00%	160		11.3	11.57	0.58	2.33	3,124,	0.07
<u>City Trust</u>	56	11	19.64%	67	237,361	2.75	3.05	2.046	1.25	37,	0.04
<u>Centum Investment Company 0.50</u>	72.5	222.5	306.90%	295	4,136,229	4	11.03	26.034	0.88	5,472,	0.03
<u>Eaagads</u>	17	0	0.00%	17	45,582	1.25	0.63	0.61	1.87	418,	0.03
<u>Unga Group</u>	19	-1.95	-10.26%	17.05	11,871,055	0	0.58	-0.85	0.5	1,132,	0.03
<u>Limuru Tea Co.</u>	347	3	0.86%	350	51,950	10	8.05	0.31	4.22	236,	0.02
<u>Pan Africa Insurance Holdings</u>	40.63	50.88	125.23%	91.5	983,761	1.44	1.96	10.73	3.31	4,392,	0.02
<u>Standard Chartered Bank</u>	139	28	20.14%	167	5,229,721	0	3.15	1.67	5.84	4,331,	0.01
<u>Housing Finance Co</u>	13.95	41.55	297.85%	55.5	50,565,982	0	0.88	24.82	4.02	5,520,	0.01
<u>Unilever Tea Kenya</u>	90.5	-10	-11.05%	80.5	193,722	2	1.07	-0.73	0.89	3,910,	0.01
<u>A.Baumann &amp; Co.Ltd</u>	13.15	-1.15	-8.75%	12	1,358,773	0	33.49	-0.72	0.2	32,	-2.79

## Small cap stocks 2006

						Divided	Eps	A.M. R	P/B	Mak. Cap (millions)	E/p
<u>Kakuzi</u>	48.25	-6.25	12.95%	42	1,268,793	0	6.79	-1.079	0.49	828,	0.16
<u>Car &amp; General (K)</u>	23	22.25	96.74%	45.25	1,722,707	1.48	6.09	8.597	1.13	1,008,	0.13
<u>Williams on Tea Kenya</u>	105	-25	23.81%	80	298,429	5	10.08	-1.587	0.34	1,042,	0.12
<u>Sasini Tea &amp; Coffee</u>	26.75	25.75	96.26%	52.5	7,350,518	1	6.23	8.33	0.59	2,090,	0.11
<u>Express</u>	13.8	9.2	66.67%	23	13,395,185	0.4	2.06	5.79	1.53	780,	0.08
<u>Kapchoru a Tea Co.</u>	154	-74	48.05%	80	13,190	5	6.67	-3.73	0.42	535,	0.08
<u>Olympia Capital Holdings ltd</u>	16	-1.35	-8.44%	14.65	314,772	0	1.14	-0.70	0.82	160,	0.07
<u>Standard Group</u>	40	13	32.50%	53	1,991,675	0	3.96	2.708	5.84	4,331,	0.07
<u>Rea Vipingo Plantatio ns</u>	20.75	4.75	22.89%	25.5	9,788,581	0.8	1.88	2.22	1.86	1,530,	0.07
<u>Crown Berger</u>	35.98	1.02	2.84%	37	1,296,739	1.5	2.69	0.58	1.17	1,038,	0.07
<u>Marshalls (E.A.)</u>	24.5	18.5	75.51%	43	411,353	1	3.11	6.63	0.45	215,	0.07
<u>B.O.C Kenya</u>	160	0	0.00%	160		11.3	11.57	0.58	2.33	3,124	0.07
<u>City Trust</u>	56	11	19.64%	67	237,361	2.75	3.05	2.046	1.25	37,	0.04
<u>Centum Investme nt Company 0.50</u>	72.5	222.5	306.90 %	295	4,136,229	4	11.03	26.03	0.88	5,472,	0.03
<u>Eaagads</u>	17	0	0.00%	17	45,582	1.25	0.63	0.612	1.87	418,	0.03
<u>Unga Group</u>	19	-1.95	10.26%	17.05	11,871,055	0	0.58	-0.85	0.5	1,132	0.03

<u>Limuru Tea Co.</u>	347	3	0.86%	350	51,950
<u>Pan Africa Insurance Holdings</u>	40.63	50.88	125.23%	91.5	983,761
<u>Standard Chartered Bank</u>	139	28	20.14%	167	5,229,721
<u>Housing Finance Co</u>	13.95	41.55	297.85%	55.5	50,565,982
<u>Unilever Tea Kenya</u>	90.5	-10	11.05%	80.5	193,722
<u>A.Baumann &amp; Co.Ltd</u>	13.15	-1.15	-8.75%	12	1,358,773

10	8.05	0.31	4.22	236,	0.02
1.44	1.96	10.73	3.31	4,392,	0.02
0	3.15	1.67	5.84	4,331,	0.01
0	0.88	24.82	4.02	5,520,	0.01
2	1.07	-0.73	0.89	3,910,	0.01
0	33.49	-0.72	0.2	32,	2.79

**Appendix D: Large vs. Small cap stocks 2007**  
Large Cap Stocks

<u>Kenya Power &amp; Lighting</u>	270	-53	19.63%	217	16,054,231
<u>KenGen.</u>	29.25	-1.5	5.13%	27.75	249,127,165
<u>Kenya Airways</u>	119	-55.5	46.64%	63.5	51,333,412
<u>TPS Eastern Africa</u>	86.5	-8	9.25%	78.5	11,631,861
<u>NIC Bank</u>	102	-39.5	38.73%	62.5	11,831,452
<u>Mumias Sugar Co.</u>	54	-39.2	72.59%	14.8	191,220,338
<u>E.A.Portland Cement</u>	128	12	9.38%	140	677,751

divided	Eps	A.M. R	P/B	Mak. Cap (millions)	E/p
3	21.72	-1.543	0.56	16,537,	
0.8	1.11	-0.199	0.6	57,157	0.
1.75	8.88	-3.764	0.7	43,853,	0.
1.25	3.93	-0.650	1.11	6,034,	0.
0.8	7.54	-3.161	1.3	6,181,	0.
1.5	2.73	-5.81	1.32	13,566,	0.
2.6	8.49	0.95	1.32	9,900,	0.0

<u>CMC Holdings</u>	17.6	0.8	4.55%	18.4	113,535,381	0.35	1.27	0.950	1.73	7,453,	0.0
<u>Centum Investment Company</u>				29.7							
0.50	32.5	-2.75	8.46%	5	102,066,016	0.45	2.03	0.950	1.76	14,711,	0.0
<u>Kenya Oil Co</u>	108	7	6.48%	115	7,536,201	0	2.34	0.540	1.78	9,915,	0.
<u>National Bank of Kenya</u>	58	11.25	-	46.75	20,979,583	0	5.6	-1.616	1.88	9,350,	0.1
<u>British American Tobacco Kenya</u>	197	-58	29.44%	139	8,494,916	17	13.86	-1.734	2.43	13,900,	0.0
<u>Jubilee Insurance Co.</u>	323	-110	34.06%	213	2,932,409	4.25	14.73	-2.72	2.48	9,585,	0.0
<u>Athi River Mining</u>	83	10	12.05%	93	15,941,216	1.25	4.26	1.129	2.68	9,212,	0.0
<u>Diamond Trust Bank Kenya</u>	72.5	22	30.34%	94.5	18,395,568	1.4	4.54	2.68	2.81	15,407,	0.0
<u>CFC Stanbic Holdings</u>											
5.00	89	40	44.94%	129	3,697,848	1.9	5.93	3.923	3.35	20,124,	0.0
<u>Equity Bank</u>	139	11	7.91%	150	59,095,937	2	5.22	0.779	3.64	54,331,	0.0
<u>Bamburi Cement</u>	215	-19	8.84%	196	12,627,897	6	9.91	-0.503	4.07	71,140,	0.0
<u>Kenya Commercial Bank</u>	24.10*	4.4	18.26%	28.5	300,629,450	0.7	1.49	1.76	4.31	56,886,	0.0
<u>East African Breweries</u>	139	29	20.86%	168	49,739,158	7.7	9.31	2.20	4.43	101,482,	0.0
<u>E.A.Cables</u>	48	-6	12.50	42	35,573,956	0.9	2.06	-0.88	4.79	8,505,	0.0

			%								
<u>Standard Chartered Bank</u>	205	1	0.49%	206	9,838,694	10	12.76	0.44	5.13	56,025,	0.
<u>Nation Media Group</u>	313	13	4.15%	326	5,070,274	10.5	15.1	0.62	5.81	23,245,	0.
<u>Barclays Bank</u>	77	2	2.60%	79	97,253,868	1.65	3.62	0.39	6.11	107,272,	0.

### Small cap stocks 2007

						divide	Eps	A.M.	P/B	Mak.	E/p
<u>Williamson Tea Kenya</u>	118	-8	-6.78%	110	640,943	0.5	-6.29	-0.52	0.28	827,	-0.
<u>Kakuzi</u>	42.25	-6	-14.20%	36.2 5	1,305,953	0	9.78	-1.18	0.37	710,	0.
<u>Unga Group</u>	18	-2.55	-14.17%	15.4 5	4,284,186	0	1.31	-1.18	0.39	924,	0.
<u>A. Baumann &amp; Co. Ltd</u>	33	-13.1	-39.70%	19.9	85,300	0	11.02	-3.30	0.41	49,	-0.
<u>Marshalls (E.A.)</u>	38	1	2.63%	39	427,796	1	2.94	0.43	0.53	345,	0.
<u>Kapchorua Tea Co.</u>	98	-8	-8.16%	90	782,445	0.5	-2.5	-0.63	0.66	535,	-0.
<u>Unilever Tea Kenya</u>	80	-15	-18.75%	65	286,024	0	-2.13	-1.56	0.84	3,176 ,	-0.
<u>Sasini Tea &amp; Coffee</u>	28.20 *	-10.7	-37.94%	17.5	19,578,380	0	-0.18	-0.89	0.93	3,325 ,	-0.
<u>Olympia Capital Holdings ltd</u>	31	16.4 5	-53.06%	14.5 5	4,241,434	0	1.48	-4.42	1.01	310,	0.
<u>Car &amp; General (K)</u>	50	7	14.00%	57	2,569,020	0.67	7.85	1.27	1.18	1,269 ,	0.
<u>Total Kenya</u>	34.75	-1	-2.88%	33.7 5	9,097,349	2.5	2.99	0.359	1.24	5,908 ,	0.

City Trust	86	64	74.42%	150	147,472	3.1	3.98	6.50	1.25	243,	0.0
Crown Berger	43.75	6.75	15.43%	50.5	3,908,057	1	3.23	1.476	1.31	1,198	0.0
Rea Vipingo Plantations	25.75	-3.5	-13.59%	22.25	5,287,492	0.8	1.92	-0.87	1.35	1,173	0
Express	24.25	0.25	1.03%	24.5	10,883,130	0.5	2.29	0.257	1.39	788,	0
Sameer Africa	24.25	12.15	-50.10%	12.1	21,830,779	0	0.43	-4.17	1.59	3,367	0.0
Eaagads	52	-7	-13.46%	45	411,750	0	-0.19	-1.12	1.75	361,	-0.0
B.O.C Kenya	160	0	0.00%	160		9.25	13.7	0.48	2.14	3,124	0.0
Standard Group	66.5	-9.5	-14.29%	57	2,487,847	1	3.96	-1.06	2.78	4,176	0.0
Eveready East Africa	17.95	-10	-55.71%	7.95	37,819,700	0	0.6	-4.64	3.06	1,669	0.0
Pan Africa Insurance Holdings	91.5	8	8.74%	99.5	3,012,075	1.6	4.19	0.87	3.32	4,776	0.0
Housing Finance Co	48	-2.25	-4.69%	45.75	37,272,796	0.25	0.64	-0.34	3.64	5,261	0.0
Limuru Tea Co.	350	25	7.14%	375	1,300	5	2.34	0.714	4.55	236,	0.0
ScanGroup	24.75	5	20.20%	29.75	51,389,277	0.9	1.54	1.98	7.79	4,730	0.0

### Appendix E: Large vs. small cap stocks 2008

#### Large Cap stocks

						divided	Eps	A.M. R	P/B	Mak. Cap (millions)	E/
Kenya Power & Lighting	217	-81	37.33%	136	6,236,518	4	22.3	2.95699	0.58	9,574	
Mumias Sugar Co.	14.8	8.05	54.39%	6.75	258,675,128	0.4	1.05	4.30743	1.38	10480	0
KenGen.	27.75	-	-	15.85	115,828,789	0.9	2.19	-3.3033	0.59	26,380	0

		11.9	42.88%								
<u>British American Tobacco Kenya</u>	139	-8	-5.76%	131	5,926,055	17	17	0.53	2.43	17,500	0
<u>Total Kenya</u>	33.75	1.75	-5.19%	32	7,878,999	2.5	4.02	0.18	1.24	5,147	0
<u>Kenya Oil Co</u>	115	-49	42.61%	66	63,952,071	8.56	8.15	-2.93	1.91	7,800	0
<u>Jubilee Insurance Co.</u>	213	-90	42.25%	123	1,623,171	4.25	14.14	-3.35	3	4,950	0
<u>National Bank of Kenya</u>	46.75	3.75	-8.02%	43	19,536,262	0	4.5	-0.668	1.85	7,200	0
<u>CMC Holdings</u>	18.4	-2.4	13.04%	16	148,746,186	0.35	1.59	-0.92	1.75	6,380	0
<u>Diamond Trust Bank Kenya</u>	94.5	-26	27.51%	68.5	12,322,254	1.4	6.28	-2.169	2.81	11,412	0
<u>CFC Stanbic Holdings 5.00</u>	129	-69	53.49%	60	5,596,291	1.9	4.94	-4.33	3.59	15052	0
<u>Barclays Bank</u>	79	28.5	36.08%	50.5	60,667,179	2	4.1	-2.795	6.34	62,802	0.0
<u>NIC Bank</u>	62.5	-19	30.40%	43.5	26,013,961	0.5	3.49	-2.46	1.5	10,606	0
<u>E.A.Portland Cement</u>	140	60.5	43.21%	79.5	484,026	0	5.96	-3.60	1.48	6,300	0
<u>Standard Chartered Bank</u>	206	-46	22.33%	160	7,785,881	10	11.34	-1.45	5.16	38,075	0
<u>icanGroup</u>	29.75	3.75	12.61%	26	25,656,742	0.62	1.79	-0.87	7.54	5,682	0
<u>Nation Media Group</u>	326	-182	55.83%	144	6,393,233	5.5	9	-4.51	5.74	17113	0.0
<u>Athi River Mining</u>	93	-2.5	-2.69%	90.5	8,153,317	1.25	5.08	-0.11	2.56	9,113	0



East African Breweries	168	-24	14.29%	144	38,156,579	0.35	8.05	-1.17	4.5	113,871	0.0
Emburi Cement	196	-31	15.82%	165	6,294,063	6	8.78	-1.062	4.07	55,532	0.0
Equity Bank	150	26	17.33%	176	67,230,601	0.3	1.07	1.46	3.64	53,319	0.0
Kenya Airways	63.5	-35	55.12%	28.5	37,958,841	1	-8.84	-4.46	3.9	10716	-0.0

### Small cap stocks 2008

						divided	Eps	A.M. R	P/B	Mak. Cap (million s)	E/p
Eastern Africa	78.5	-26	33.12%	52.5	7,445,508	1.25	2.1	-2.627	1.2	4,313	0.04
A.Cables	42	15.75	37.50%	26.25	26,265,385	1	1.94	-2.926	4.83	4,100	0.0
Insurance Co	45.75	26.35	57.60%	19.4	34,195,932	0.3	0.8	-4.744	3.67	3519	0.04
D.C Kenya	160	0	0.00%	160		6.8	10.2 6	0.354	2.14	3,124	0.06
Standard Group	57	-7	12.28%	50	1,504,160	1.1	3.57	-0.86	2.85	2,931	0.071
Africa Insurance Holdings	99.5	-37.5	37.69%	62	1,349,840	1.6	-2	-3.006	3.29	2,448	-0.03
Kenya Insurance	12.1	-6.1	50.41%	6	7,813,587	0	0.54	-4.20	1.6	1419	0.09
Kenya Tea Coffee	17.5	-10.5	60.00%	7	9,690,120	0	3.84	-5	0.96	1368	0.548
Kenya & General (K)	57	-13	22.81%	44	926,846	0.67	9.5	-1.80	1.18	980	0.215

<u>Rea Vipingo Plantations</u>	22.25	-8.3	37.30%	13.95	4,817,000	0.2	2.8	-3.03	1.46	720	0.200
<u>Williamson Tea Kenya</u>	110	-52.5	47.73%	57.5	464,575	4	12.6 2	-3.67	0.34	709.26	0.21
<u>Unga Group</u>	15.45	-1.85	11.97%	13.6	3,592,917	0	3.67	-0.997	0.38	696	0.26
<u>Crown Berger</u>	50.5	25.75	50.99%	24.75	3,624,938	1	1.2	-4.084	1.38	652	0.04
<u>Kakuzi</u>	36.25	13.25	36.55%	23	820,866	1	13.1 2	-2.816	0.38	646	0.570
<u>City Trust</u>	150	0	0.00%	150	63,375	0.5	6.27	0.027	1.26	607	0.041
<u>Eveready East Africa</u>	7.95	-4.45	55.97%	3.5	20,929,498	0	0.09	-4.66	3.75	546	0.025
<u>Marshalls (E.A.)</u>	39	-12	30.77%	27	190,300	0	11.8	-2.56	0.54	345	0.437
<u>Kapchorua Tea Co.</u>	90	-22	24.44%	68	108,400	2.5	17.8 7	-1.80	0.67	332	0.262
<u>Express</u>	24.5	-11.5	46.94%	13	4,207,606	0	1.24	-3.911	1.56	318	-0.0
<u>Olympia Capital Holdings Ltd</u>	14.55	-4.55	31.27%	10	9,093,685	0.1	1.42	-2.54	1.05	274	-0.14
<u>A. Baumann &amp; Co. Ltd</u>	19.9	-8.8	44.22%	11.1	66,700	0	2.75	-3.68	0.49	42.62	-0.24
<u>Limuru Tea Co.</u>	375	-70	18.67%	305	700	5	183	-1.44	4.55	14.1	0.6