

**RELATIONSHIP BETWEEN OWNERSHIP STRUCTURE AND CAPITAL
STRUCTURE FOR COMPANIES QUOTED AT THE NAIROBI STOCK
EXCHANGE.**

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**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS
ADMINISTRATION. FACULTY OF COMMERCE. UNIVERSITY OF
NAIROBI. 2005**

DECLARATION


This project is my original work and has not been submitted for a degree in any other university

Signed 

Date 5th Nov 2005

Matibe Mildred Gesare

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

Signed 

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DEDICATION

To my father Paul Matibe for all the support, encouragement and prayers, my late mother whose love will always be felt.

To all other family members may the bond among us grow stronger in Gods light and guidance. Thank you and God bless you.

ACKNOWLEDGEMENT

I am indebted to many people without whom this study would have been impossible. I would like to extend my gratitude.

To my supervisor Mr. Anyangu, I would like to express my thanks for the wise counsel and expertise provided, comments, and criticism and to acknowledge the useful insights provided throughout this research project.

My colleagues at Augustana College who gave me that 'gentle push' when I needed it and kept me on track.

I am in gratitude to my family and friends for constant support and love during the period of my study.

My heartfelt thanks to everyone who had a part in this study

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Abstract

This study examines the relationship between corporate firm's ownership structure and capital structure. The study uses a time series data of publicly listed companies dated from 1998 to 2002 and analyzes firm's financing behavior in connection with ownership structure.

The results suggest that capital structure of the companies in the Nairobi Stock Exchange, have an average of 0.078%. The ownership Structure for companies in the Nairobi Stock Exchange is mixed; state, individual, institution, and foreigners. On average the state holds mainly 4%, individuals 19%, institution 49% and Foreigners 28%.

The findings also show that there is negative correlation of Individual, Institution and Foreign ownership with the capital structure. However, for state ownership there is a strong positive correlation with the capital structure.

It is recommended then, tax policies should be reduced and the laws of bankruptcy revised, such that the costs are minimal enough to encourage borrowing. In addition, the findings also indicate that there is a trend to avoid debt for companies without state interests. Suggesting that debt is still avoided as much as MM (1963) hypothesis suggests an increase in value due to tax shield. Therefore, lending institution should offer funds for borrowing at reasonable rates that will attract corporate borrowers and even off shore borrowers who seem to have an even greater aversion to debt.

1. INTRODUCTION

1.1 Background

Since Modigliani and Miller's (1958) irrelevance proposition concerning capital structure choices and firm value, a considerable attention has been focused on cross-sectional and time series variations in capital structure. After the works of Jensen and Meckling (1976), a recent approach in trying to explain the variations in capital structure has been to incorporate agency theory perspective, for example Barton and Gordon (1988) look at management perspective in an attempt to provide an explanation for the variations in capital structure.

Under the agency theory perspective, the capital structure decision is not only determined by internal and external contextual factors which impact on the basic concerns of risks and control, but the value; goals and preference and desires of managers and block holders are also important inputs to the financial decisions Brailsfort, Oliver and Pua (2000). In addition, It is evident that external block holders have incentives to monitor and influence management appropriately to protect their significant investments; Friend and Lang (1988).

1.1.1 Capital Structure and Value

Access to finance plays a major role in the success of any business of any kind. A successful business maximizes the interests of its owners. Hence Pandey (1999), suggests that wealth maximization is a criteria for finance decisions. Corporate financing choices are important. Most firms need outside financing to invest and grow rapidly, and

different forms of finance present varying costs to the firm. It is therefore important that the firm chooses the lowest cost form of financing to maximize returns. This is in line with the ultimate interest of the shareholder, that is, wealth maximization.

The capital structure relationship with the firm value has received considerable attention since Modigliani and Miller 1958, presented their seminal article to demonstrate that in a frictionless world financial leverage is unrelated to firm value. However, other researchers have introduced imperfections, such as bankruptcy costs (Stiglitz, 1972), agency costs (Jensen and Meckling, 1976), to the analysis and contributed to the relevance theory. Capital structure may indeed influence value and hence an optimal capital structure may exist.

In determining a financial policy there are various factors, which may influence this decision. These include financial flexibility and impact of the decision on financial statements (concern about earning per share dilution). Other important factors include weighted average cost of capital and the tax advantage (Bancel and Mittoo, 2002).

In financing, managers may exercise three main choices; use retained earnings, borrow through debt instruments or issue new shares. This leads to a standard capital structure of a firm, which comprises of retained earnings, debt, and equity.

1.1.2 Ownership Structure in Limited Companies

Jensen and Meckling (1976), suggested that, investment decisions can act as transmission between ownership and value. Hence, managerial ownership affects investment and a

firm's market value. Ownership is important as it also influences the market for corporate control. Ownership structure shows the degree of risk diversification by shareholders (Pandey 1999). In a limited company ownership structure may be concentrated or diffused (Coffee, 1999).

A concentrated ownership structure shows less diversification of risk. That is there are few shareholders each holding huge chunks of shares. Implying then that the shareholders in this case are more exposed to risk making the cost higher to the shareholders as they have to be compensated for risks taken which in this case is high. In addition, in a concentrated ownership structure, for fear of loss of control the shareholders may issue preference shares or raise debt capital.

For a largely diversified company the fear of loss of control is not an issue, the main concern of the shareholders is dividend and capital gains. If they are not satisfied they simply sell off their shares. In a diversified ownership structure, we have numerous shareholders holding small chunks of shares.

In many limited companies, ownership is separated from management. This poses potential agency problem. Agency problems between shareholders and managers occur because managers may not be maximizing the shareholder's value. Thus, there arises needs to some ways of controlling this and ensuring shareholders interests are met. One way may be through debt, which according to Grossman and Hart (1980), act as a disciplinary device especially where there is free cash flow. In a case where this is not

so, it will be difficult to obtain funds from investors who knowing their return on their funds are not prioritized will be less willing to invest making it difficult to sell in the stock market, thus depressing the prices.

In relation to value considerable research has been done to establish the relationship between ownership structure and value. In a research from the Spanish market by Vera and Ugedo (2003), there was evidence of negative relationship between firm value and ownership of shareholders holding large blocks. On the other hand, presence of an individual or family as the major shareholder has a favorable influence on the value of the firm. It is clear then that the nature of the major shareholder does influence the value of the firm. Major shareholders in limited companies may be made of institutions, individuals, and family investors among others all of whom offer different control mechanism.

1.2 Statement of the Problem

There is an increased agreement among various researches conducted, that ownership structure does influence the performance of a firm (Oltetia, 2002; Gemmil, 2001; Davies, Hiller, & McColgan, 2002). Others have analyzed the significant role played by individual shareholders (Wall Street Journal 1995). Other researches have examined the interaction of Capital structure and ownership for the benefit of analysis of interaction effects.

Researches conducted to investigate the influence of ownership on capital structure include; Firth (1995) who concluded that capital structure of the firm is dependent upon the relative influence and power of substantial institutional shareholders. Chen and Steiner (2000) find a clear positive relationship between managerial ownership and leverage. Others include, Holderness and Sheehan 1988, Amihud et.al. 1990; Chatrath 1994. On the other hand, Gner & Zychoweiz 1994, suggested that there exist a negative relationship between institution ownership and leverage. Friend and Lang (1998) find a significant relationship between the leverage and managerial ownership.

All these researches were conducted in industrialized countries, but very limited work has been done in developing countries. A local study by Odinga (2003), looked at determinants of capital structure of companies listed at the Nairobi Stock Exchange.

The determinants analyzed were market tangibility, profitability, business risk, growth, size and Non-debt tax shield. The study however, left out the factor of ownership which according to Wu (2004) plays a disciplinary role of capital structure policy. Many developing countries initially chose state-sponsored way as a route for development, other corporate financing needs were met by international development banks. A scenario which is slowly changing and thus provides a fertile ground for attention and research or as Whitley (1992) pointed out the impact of ownership structure on firm's capital structure are still in their relative infancy. This coupled with the controversies highlighted above make it imperative for a study to shed further light on the subject of capital structure. The issue is particularly important for developing economies where the role of institutional factors in business development is particularly pronounced.

1.3 Objective of the Study

The objective of this study is therefore to investigate the relationship of ownership structure if any, on the capital structure of companies listed at the Nairobi Stock Exchange.

1.4 Importance of the Study

The study is important to different stakeholders in various ways:

- i. To the management of the companies, it gives an in-depth understanding of the ownership structure
- ii. To the management help recognize ownership structure and its influence on the financing decisions
- iii. To assist current and potential investors by arming them with valuable information to help in the investment decisions
- iv. To academics, the study is a contribution to the literature on a different angle of ownership influence.
- v. For policy makers the study helps in understanding the effect of ownership on value of the firm, hence come up with policies that will help the firm improve the value and the economy at large.

2. LITERATURE REVIEW

2.1 Capital Structure Theories

A firm's capital structure (financial structure) is the specific mixture of long-term debt and equity the firm uses to finance its operation (Ross 1989). A firm has many alternatives to choose from to combine the components, and is guided by the objective of firm value maximization. Therefore whichever structure the firm chooses to adopt it should be in the best interest of its value.

Several theories have been put forward to explain the relationship between capital structure and firms value. The theories are based on three approaches, Traditional, Net Income and Net Operating Income approaches (Rao 1989).

Modigliani and Miller (1958), proposition I embraced the Net Operating Income Approach and suggested that the market value of the firm remains constant as capital structure is changed (Pandey 1999). Generally stated, MM proposition I postulated that the market value of the firm is not affected by the capital structure. However the above conclusion was arrived at under the assumption of a perfect market.

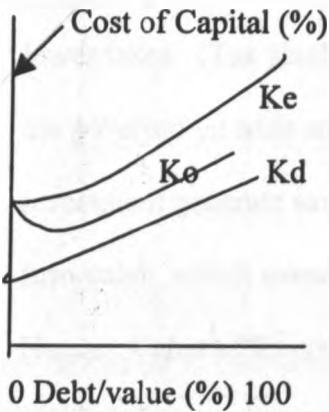
Other approaches on the other hand concluded that capital structure is actually relevant in the market value. They include:

2.1.1 Traditional Approach/Intermediate Approach

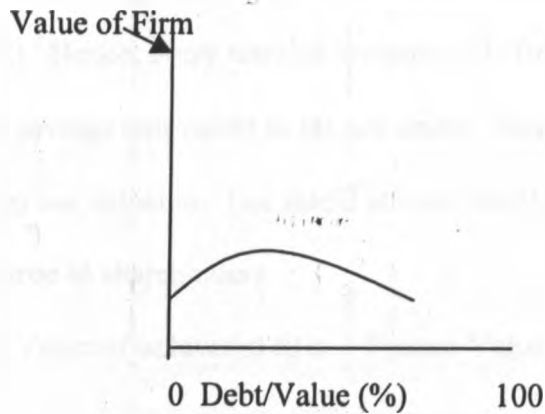
MM (1958), seminal paper overturned the Traditional approach, which was, based on the firm's weighted average cost of capital (WACC). The theory postulated that the optimal leverage occurs where the WACC is minimized and the value of the firm maximized.

The theory first suggests that the cost of debt is generally cheaper than that of equity. Implying that cost of debt plus the increased cost of equity, together on a weighted basis will be less than the equity, which existed on equity before debt financing (Pandey 1999). Therefore the WACC schedule is U-shaped when plotted against leverage, with the cost of debt and equity both rising at an increasing rate. The corresponding market value schedule is an inverted U shape. The stated relationship is depicted in the diagram below. Thus an optimal capital structure exists when the cost of capital is minimum or the value of the firm is maximum.

Graph I



Graph II



K_e : Cost of Equity

K_o : WACC

K_d : Cost of Debt

Other theories introduce market imperfections to derive capital structure relevant theories, thus concluding that optimal capital structures do exist. The theories are discussed below.

2.1.2 MM Hypothesis Under Corporate Taxes

Under this scenario, value of the firm will increase with debt due to deductibility of the interest charged for tax computation, and the value of the levered firm will be higher than that of the unlevered firm (MM, 1963).

With the introduction of corporate taxes in the MM hypothesis, the resulting effect is that interest paid to debt holders is a deductible expense, therefore the return to debt holders is not subject to taxation at the corporate level; making debt advantageous. This is because the tax shield lowers the levered firms taxable income, and consequently its taxes.

Debt financed firms can then be said to be 'subsidized' by the government, due to the lower taxes. (Tax shield = $T \times I$). Hence, every time an investment is financed by debt the government adds some cash savings equivalent to the tax shield. Since, the investment generate savings, they are valuable. Tax shield should therefore, increase firm value, which eventually accrue to shareholders.

Hence: Value of levered firm = Value of unlevered firm + Present Value of tax shield.

2.1.3 MM Hypothesis with Bankruptcy Consideration

Holding all factors constant, the threat of bankruptcy increases with increase in amount borrowed. In addition there will be increased restrictive covenants that hinder the normal operations of the firm (Van Horne 2002). With the presence of bankruptcy costs it means security holders generally receive less than they would. Levered firms have greater possibilities of bankruptcy than unlevered firms. Possibility of bankruptcy is not a linear function of the debt-to-equity ratio, but increases at an increasing rate beyond some threshold. Thus, as expected cost of capital increase, in this manner there would be a corresponding negative effect on the value of the firm and on its cost of capital (Van Horne 2002).

2.2 Factors that Determine Capital Structure

In explaining factors that influence capital structure (in extent the aggregate value) of a firm Lawrence Booth (1999), considered three principal theoretical models of Capital structure: - Trade-off Model, Pecking Order Model, and Agency theory Framework.

According to Booth, in each model, the choice between debt and equity depends on both firm specific and institutional factors. That is, in the Trade Off Model; the determining factors include tax rates, asset type, business risk, profitability and bankruptcy code. In the Agency Theory Framework, conflicts of interest between inside and outside investors determine an optimal capital structure; firms' assets and growth opportunities are important in agency costs, which are traded off against other financial costs. In the Pecking Order Theory, financial market imperfections are the main basis that is

transaction costs and asymmetry information links the firm's ability to undertake new investments to its internally generated funds.

According to Shyam-Sundr and Myers (1998) many current empirical tests lack sufficient statistical power to distinguish between the models. Therefore, the approach in explaining capital structure choice will be in using a variety of variables that can be justified by any or all of the three models. These variables are discussed in the following section.

2.2.1 Taxes

DeAngelo and Masulis(1980), support the differential tax argument . As tax deductibility of interest payments increases the total cash flows available to bondholders and stockholders, a firm that is paying taxes should consider financing with debt. Whether the company will pay taxes depends on its future profitability (Pandey 1999). If the company expects to incur large losses in the future or if it has large tax-loss carry forwards, it may not pay taxes, and debt is not attractive. Even when it expects to carry tax losses forward to off set its eventual profits, debts may not be attractive, as present value of these future tax shield may be very small. Thus, such a company may refrain from taking debt as a source of capital.

2.2.2 Stability of Earnings and Profitability

Companies that expect to have stable earnings are best served by debt. Unstable earnings can subject a firm to financial distress. As a firm takes on more debt it increases its fixed obligations (interest payments) to service the debt. If a firm's cash flows fluctuate

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widely, perhaps due to the firm's business cyclical, the possibility of financial distress increases (Rao, 1989).

Firms with risky cash flows should therefore take on less debt. It does not make much sense to get into a situation of financial distress with the hope of capturing tax shields from debt financing. The tax shields may not be worth much if financial distress eventually leads to bankruptcy (Rao 1989).

Past profitability of a firm and hence amount of earnings available to retain is an important determinant of its capital structure. The high costs in raising new equity results in firms raising capital first from retained earnings, second from debt and third from issuing new equity (Brealy and Myers 1984).

2.2.3 Nature of Assets

Assets can generally be classified into two categories; tangible and intangible. Tangible assets can usually be sold easily because there is active secondary market for them. On the other hand, it may not be easy to sell management skill or know how. Items of "human capital" are more difficult to market. In addition, they are difficult to estimate when a firm goes bankrupt. Hence firms with tangible assets generally use more debt than those without such assets. Bondholders do not feel very comfortable extending much debt to consulting firms.

Myers (1977), suggest that firms may find it beneficial to sell secured debt as issuing debt secured by property with known values avoid cost associated with information asymmetry. Hence, firms with assets that can be collateral may be expected to issue more debt to take advantage of this opportunity (Titman, Wessels 1988).

2.2.4 Flexibility and Timing

Flexibility refers to the extent to which firms have some freedom in choosing the type of financing- debt or equity they will employ in the future (Pandey 1999). Firms should be able to raise capital without undue delay and cost. Pandey (1999), further suggests that , when firms raise capital they do so in blocks instead of issuing both debt and equity contemporaneously in a fixed proportion. This is because of the economies of scale, which makes it cheaper than small blocks.

Further stock and bonds market are volatile. Hence, when one decides to float the stocks or bonds in the market it takes a while before it is all sold. Meanwhile the firm's future is left uncertain in the market due to the uncertain forces that operate in the market to influence market prices (Pandey 1999)

If the company has some flexibility, then it can be able to time the issue and raise capital at the most opportune time. For debt, the appropriate time would be when the interest rates are low. For equity capital the firm would like to sell equity when the stock prices are high. With flexibility then a firm can raise additional capital, especially if the level of debt allows for it while waiting for the appropriate time to issue stock.

2.2.5 Control

Control is another consideration in the Debt-Equity ratio decision, especially for small closely held companies (Pandey 1999). When a further equity issue reduces ownership then a firm may prefer debt issue. Sometimes the existing management is governed by its desire to continue control over the company. For example for widely held company, the shareholders do not take an active part in the company management; they are simply interested in dividends and capital gains.

2.3 Corporate Governance and Ownership Structure

2.3.1 Ownership Structure

The corporate world today is subdivided into rival systems of dispersed and concentrated ownership, with different corporate governance structures characterizing each (Coffee, 1999).

A concentrated ownership structure is characterized by, few owners holding big chunks of shares (high concentration of equity capital ownership). This implies that risk for the shareholders is less diversified. In addition, this concentration also means that the holders being risk averse expect high returns from holding huge chunks.

Concentrated ownership allows shareholders to look after their interests well. Looking at this generally, it will seem that then the value of the firm will be positive as the concentrated ownership leads to controlling of management decisions in favor of the owners. On the other hand, it may also mean an undeveloped capital market where

gaining control as a means of discipline would be ineffective. Hence the majority shareholder may take advantage and make decisions (including financing decisions) that are of their benefit rather than the firm.

A dispersed ownership on the other hand implies that the structure is diffused with shareholders holding bits of shares.

Arrays of research on ownership structure suggest that the characteristic of the major shareholder may influence the firm's value. For example a research by Oltetia (2002) concluded that some groups that dominate for example the state and legal firms contribute insignificantly to the performance of firms while inclusion of a foreign owner increases the performance. Other researchers argue that major shareholders have different capabilities lending the firm either an advantage or a disadvantage. Diamond (1984) predicts that Institutional investors have an advantage of economies of scale; Pound (1988) suggest that, Institution investors have more experience in controlling. This can work for or against the firms' value as some institutions may form alliances with the managers such that their interests may take precedence over firms' value.

For individuals or family as a dominant shareholder there is more motivation to exercise some control, as the ability to diversify investment is limited. In addition, the managers have to take the interests of maximizing shareholders value, as a first priority as there is more likelihood of restructuring when the individual shareholders are not satisfied.

The mentioned studies give evidence that the general characteristic of firm's ownership structure can performance on one hand, on the other hand it is therefore good place to start in giving evidence in the interrelationship between the structures of ownership and capital. Researches in this area include:

Friend and Lang (1988), whose research was based between the period 1974 and 1983, used 984 U.S. firms. They used a cut off point of 13.85% management ownership to separate sample into publicly held and closely held. They concluded that when 13.85% is owned by directors and 10% by Non managerial Shareholders there is average debt ratio than when 13.85% is owned by directors. In both cases debt (defined on a book value) is negatively related to management shareholders.

Friend and Hanbrouk (1988), used data covering 1983 only for 1476 non financial and non utility U.S firms. They concluded that market value of insider holdings is significantly and positively related to firm gearing.

Jensen and Meckling (1976) argue that managerial equity ownership reduces managerial incentives to engage in non-optimal behavior. As managerial ownership increases, managers bear more of the wealth effects of their divergent behaviors. Thus, the disciplinary pressure of leverage and managerial ownership are substitutes (Wu 2004).

Shleifer and Vishny (1986) and Pound (1988) suggest that institutional investors serve as an alternative mechanism to control the over investment problem. Institutional investors

have greater expertise in gathering and interpreting information on firms, and have more incentives to closely oversee managerial activities with an increase in their equity ownership. This implies that institutional ownership and leverage serve as substitutes in controlling managerial self-interest. Institutional investors impose their managerial preferences through the governance process. Gner and Zychowitz (1994), Bathala, Moon and Rao (1994), and Crutch and Jensen (1996) suggest that there exist a negative relation between institutional ownership and Leverage.

From the works of Harijono, Ariff and Tanewski (2004) using data from publicly listed industry firms in Australia traded over 1998-2002, family controlled firms appear to have higher levels of leverage than non family counterparts. Results indicate that the families' incentive to use debt as a means of concentrating voting power outweighs the need to reduce debt in order to mitigate firm risk.

Wiwattanakantang (1999), found levels of leverage were higher among family controlled firms in Thailand, whereas Mishra and McConaughy (1999) found that family firms in the US employ lower levels of leverages.

2.3.2 Factors That Determine Ownership Structure

Literature available that explain determinants of ownership structure of Kenyan companies is limited. However, in other countries especially the developed countries a number of researches have been done in trying to identify factors that determine ownership structure. Demsetz and Lehn (1985) for example, examined 511 publicly

listed US companies in trying to determine the reason for ownership concentration and came up with the following reasons; (i) Company size; (ii) riskiness of the firm; (iii) degree of regulation in a firm. La-porta et al (1998), suggest that quality of legal protection of shareholders helps determine ownership concentration. He explains that countries with relatively poor legal protection of investors, publicly listed companies are likely to have large block holders. Bebchuk (1999) develops a model in which the extent of ownership concentration in publicly listed firms depends on the size on private benefits of control. He demonstrates that, when private benefits of control are large, a founder is less likely to relinquish control after an Initial Price Offering. Thus in cases where private benefits are large, a concentrated form of ownership is likely to be found.

For many firms, at any time, there are controlling and minority shareholders each with own interest. This creates a fertile ground for conflicts of interest (Agency costs). Thus any firm requires a corporate governance system that will ensure the interests of owners regardless of the percentage held is pursued.

2.3.3 Corporate Governance

Corporate governance are the set of control rights that influence the decision taken by enterprise management and assure that outside funds can be realized to implement those decisions (Roland 2000). Sound corporate governance should hence provide effective protection for stockholders and creditors and also create a conducive environment for efficient and sustainable growth of the corporate sector.

Effective corporate governance is characterized by the following (Morgan):

- A well established and maintained internal control system
- A regulated financing policy
- Regular monitoring of performance
- Systematic approach to risk management
- Having proper communication with shareholders

Two types of corporate governance systems can be identified.

First, outsider Systems: Where owners of firms have a transitory interest in the firm with no close relationship with those in senior managerial positions. There's also an active market for corporate for corporate control takeovers as both a remedy for managerial failure and a disciplinary mechanism.

Second, insider Systems: Owners of the firm have an enduring interest in the firm and often hold positions on the Board Of Directors. There is close relationship between management and shareholders.

2.3.4 Agency Costs

In a survey by Donaldson (1984), he concluded that the primary concern of mature business is the creation and conservation of corporate wealth not shareholders welfare.

This means that the goals of management and shareholders may conflict.

Conflict Between Equity holders and Managers.

The above stated conflict may arise due to the following reasons:

- Managers prefer to award themselves huge perquisites for low efforts

- Managers may prefer short-term projects: which produce early results and enhance their reputation quickly rather than more profitable long term, projects.
- Managers may prefer less risky investments, lower leverage to lessen probability of bankruptcy.
- Managers will wish to minimize likelihood of employment termination as this increases with changes in corporate control, management may resist takeovers, irrespective of their effect on shareholders value.

Solutions to Limiting These Principal-Agent Problems

Shareholders can keep the management in check by several methods as Prasaad, Green and Murinde (2000) highlights;

First by reducing any 'free' cash flow, by increasing firms dividend payment or increasing its leverage. Increase in leverage increases risk of bankruptcy, and hence limits management's consumption of perquisites.

Another means would be through having a model in which a manager has an incentive to invest the firm's resources in assets that are highly valued under the manager than under the next best alternative manager.

Kensinger (1986), proposed a radical solution of reorganizing the firm into a limited partnership, the managing partner has limited discretion in dividend and reinvestment decisions. The re-investment of profits is in the hands of individual shareholders, which

reduces the management shareholders agency cost by removing the management's decision-making power.

Conflict Between Equity Holders and Debt Holders

Smith and Warner (1979) identify major sources of conflicts between these two groups.

That is:

Claim dilutions; bonds are normally priced assuming that firms will not carry more leverage. If the firm does issue additional debt, then existing debt will fall in value if the new issued debt has higher priority.

Asset Substitution: bonds are priced in relation to the risk of the project being financed. Lenders' claims may be reduced if the firm substitutes projects that increase the firm variance. This transfers wealth from bondholders to shareholders.

Solutions to these Conflicts

Use of contracts can minimize the conflicts and even increase the value of the firm (Prasaad, Green & Murinde 2000). This is because the cost of monitoring, which debt holders incur if shareholders do not maximize the value of the firm, is reduced. This results form increased monitoring and improved management.

3. RESEARCH METHODOLOGY

3.1 Population

The population of this study comprises all companies listed in the Main Investment Market Segment (MIMS) and The Alternative Investment Market Segment (AIMS) of the Nairobi Stock Exchange (NSE). These are currently 48 in number. The NSE is divided into three-market segment: Main Investment Market Segment (MIMS), The Alternative Investment Market Segment (AIMS) and The Fixed Income Securities Market Segment (FISMS). The NSE offers a good choice due to the wide variety of industries represented in the Stock Exchange for example: Agriculture, Commercial and Service, Finance and Investment and Industrial and Allied. In addition the NSE requires that firms publish their annual reports with reasonable disclosure. Hence, this provides a good data bank for retrieving historical data from financial statements.

3.2 Sample

From the population, a sample was obtained for the period 1998 to 2002, which excluded financial institutions, companies in the Alternative Investment Market Segment and outliers.

Financial institutions were excluded because their capital structures were likely to be significantly different from non-financial institutions. In addition most data of the AIMS could not be obtained. The outliers consisted of companies whose data for all the five years could not be obtained, due to deregistration; Lake star Company, Hutchings

Biemer, or inability to obtain data; Athi River Mining, Total Kenya , Car and General.

All these left a total of 21 companies.

3.3 Data Collection

Data for the purpose of this study was mainly from secondary sources. Data on annual financing of the companies was collected from the published accounts of the companies listed in the NSE covering the years 1998 to 2002. The annual reports were obtained from the NSE. In addition, information relating to the ownership was obtained from the Capital Market Authority (CMA), which regulates the percentage owned by foreign investors.

3.4 Data Analysis

Capital Structure was the key dependent variable of this study. It was measured by:

$$\frac{\text{Book value of total debt}}{\text{Book value of debt} + \text{Market value of equity}}$$

The independent variable in the study was ownership structure (Equity ownership).

Various dimensions of ownership structure were examined. These included: institutions, a corporate person incorporate or registered in the East African Community; individual, a natural persona, who is a citizen of the East African Community partner state; Foreign investors and the Stat

Information collected was tabulated as follows:

| Category | Percentage owned(x) | Capital Structure(y) |
|-------------|---------------------|----------------------|
| Institution | | |
| Individual | | |
| Foreign | | |
| State | | |
| Total | | |
| Average | | |

Correlation analysis was carried out on the variables defined above using the equation below:

Correlation Coefficient equation: $r = \frac{\sum xy}{\sqrt{\sum xx \sum yy}}$

4.0 DATA ANALYSIS AND FINDINGS

4.1 INTRODUCTION

This paper analyzes the relationship between ownership structure and the capital structure of a sample of companies listed at the Nairobi Stock Exchange, during calendar years 1998 –2002. The sample excludes financial institutions, companies in the Alternative Investment Market Segment and outliers.

In finding the relationship between ownership structure, and capital structure. The capital structure for each company and each year was obtained using the formula: book value of total debt divided by the sum of Book value of debt and Market value of equity. This information is presented in table 1.

| | Company Name | 1998 | 1999 | 2000 | 2001 | 2002 | AVERAGE |
|----|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1 | Brooke Bond | 0.00000 | 0.00027 | 0.00028 | 0.00042 | 0.00055 | 0.00031 |
| 2 | Kakuzi | 0.00011 | 0.00033 | 0.00047 | 0.00063 | 0.00152 | 0.00061 |
| 3 | Rea Vipingo | 0.00001 | 0.00004 | 0.00071 | 0.00101 | 0.00013 | 0.00038 |
| 4 | Sasini Tea & Coffee | 0.00005 | 0.00006 | 0.00006 | 0.00009 | 0.00023 | 0.00010 |
| 5 | CMC Holdings | 0.00010 | 0.00014 | 0.00127 | 0.00147 | 0.00064 | 0.00072 |
| 6 | Kenya Airways | 0.00093 | 0.00164 | 0.00231 | 0.00248 | 0.00211 | 0.00189 |
| 7 | Marshalls (E.A) | 0.00005 | 0.00002 | 0.00013 | 0.00017 | - | 0.00007 |
| 8 | Nation Media G | 0.00005 | 0.00004 | 0.00013 | 0.00008 | 0.00001 | 0.00006 |
| 9 | Tourism Promotion | 0.00023 | 0.00048 | 0.00056 | 0.00069 | 0.00053 | 0.00050 |
| 10 | Uchumi | - | - | - | - | - | - |
| 11 | Bamburi Cement | - | 0.00024 | 0.00023 | 0.00048 | 0.00015 | 0.00022 |
| 12 | BAT | - | 0.00014 | 0.00009 | 0.00011 | 0.00012 | 0.00009 |
| 13 | BOC Kenya | - | 0.00003 | 0.00006 | 0.00007 | 0.00008 | 0.00005 |
| 14 | Carbacid | - | - | 0.00011 | 0.00018 | 0.00019 | 0.00010 |
| 15 | East African Cables | - | 0.00002 | 0.00002 | 0.00012 | 0.00012 | 0.00005 |
| 16 | E.A. Portland | 0.00009 | 0.00026 | 0.00032 | - | - | 0.00014 |
| 17 | EABL | 0.00005 | 0.00015 | 0.00006 | 0.00011 | 0.00013 | 0.00010 |
| 18 | Firestone | - | 0.00005 | 0.00004 | 0.00007 | 0.00007 | 0.00005 |
| 19 | Kenya Oil Co. | 0.00016 | 0.00016 | 0.00008 | 0.00031 | 0.00034 | 0.00021 |
| 20 | K.P.L.C | 0.00012 | 0.00014 | 0.00131 | 0.02228 | 0.02521 | 0.00981 |
| 21 | Unga Group | - | 0.00017 | 0.00016 | 0.00023 | 0.00364 | 0.00084 |
| | AVERAGE | 0.00009 | 0.00021 | 0.00040 | 0.00148 | 0.00170 | 0.00078 |

Table 1: Average Capital Structure From 1998-2002

From the analysis of capital structure of the companies in the Nairobi Stock Exchange, the companies have an average of 0.078% as the Capital Structure. With some companies shying away from long term loans and opting to use Equity instead.

Data for the Ownership Structure was collected and grouped under various categories: Percentage owned by state, individual, institution and foreigners, for each year. Averages were then obtained for each category and for each year. This information is represented in table 2.

Table 2: Average Ownership Structure From 1998 to 2002

| YEAR | STATE | INSTITUTION | INDIVIDUALS | FOREIGNERS |
|---------|----------|-------------|-------------|-------------|
| 1998 | 0.041042 | 0.500940593 | 0.193867493 | 0.264149743 |
| 1999 | 0.044615 | 0.441429330 | 0.207512380 | 0.306443745 |
| 2000 | 0.048448 | 0.465150657 | 0.194739867 | 0.291661889 |
| 2001 | 0.038923 | 0.528356305 | 0.157664941 | 0.275055631 |
| 2002 | 0.041696 | 0.514849303 | 0.185611482 | 0.257843223 |
| Average | 0.04 | 0.49 | 0.19 | 0.28 |

The ownership Structure for companies in the Nairobi Stock Exchange is mainly in the following categories; State, Individual, Institution, and Foreign Investors. On average the State holds mainly 4%, Individuals 19%, Institution 49% and Foreigners 28%. (More information on the Statistics is presented in Appendix 2. This means then majority of the investors are institutions and Foreigners. This is because the institutions as said by Diamond (1984) have an advantage of economies of scale; Pound (1988) suggest that, Institution investors have more experience in controlling. Individuals in Kenya due to lack of knowledge, and limited resources shy away from financial securities and give more weight to real assets.

4.2 Relationship Between Ownership Structure and Capital Structure

In determining the nature of the relationship between the two variables, correlation analysis was done between the two arrays of data.

In correlating the two variables Tables 3 to 6 show the correlation of the various categories with the capital structure.

Table 3: Correlation Between Percentage owned by the State and Capital Structure

| Year | Correlation |
|------|-------------|
| 1998 | 0.47537415 |
| 1999 | 0.37769206 |
| 2000 | 0.58799633 |
| 2001 | 0.70555328 |
| 2002 | 0.60612822 |

Average 0.55054881

The average correlation 'r' is 0.55

The value for r is always between -1.00 and +1.00. For values that are positive there is a positive correlation, meaning that the two variables vary in the same direction (i.e. as X increases Y increases, or as x decreases Y decreases). For values that are negative there is a negative correlation, meaning that the two values vary in opposite directions (i.e., as X increases Y decreases, or as X decreases Y increases). (Owen and Jones, 1981).

The closer to 1.00 the value for r is, the greater the correlation. So, at +1.00 there is a perfect positive correlation, and at -1.00, there is a perfect negative correlation. At 0.00 there is no correlation between the two variables. If the value is greater than 0.50 in either

the positive or negative direction, there is likely a significant correlation between the two variables. (Owen and Jones, 1981).

The correlation between the percentage owned by the state and capital structure is 0.55. This indicates a positive relationship. That is, as the percentage owned by the state increases in a given company, the more likely it is for the company to have a higher capital structure. Companies with high state ownership are likely to finance their firms with debts. This may be argued along the suggestions of Wu (2004), that the disciplinary pressure of leverage and managerial ownership are substitutes. In State controlled firms, especially when it holds a majority of the shares, the options of raising more capital is limited to debt as sometimes the existing management is governed by its desire to continue control over the company and pursue own interests. To ensure then that the managers are pursuing the interests of the owners, the state will engage more debt.

In addition the value 'r' is 0.55 indicating a significant positive relationship between the percentage owned by the state and the capital structure.

Table 4: Correlation Between Percentage owned by Individuals and Capital Structure

| Year | Correlation |
|-------------|--------------------|
| 1998 | -0.151422649 |
| 1999 | -0.128572925 |
| 2000 | -0.122152409 |
| 2001 | -0.001801019 |
| 2002 | 0.103947170 |

Average -0.060000366

The correlation 'r' is -0.06 .

The above findings suggest, that there is negative correlation between the percentage owned by individuals and the capital structure. This is in line to the findings of Gner and Zychowitz (1994), Bathala, Moon and Rao (1994), and Crutch and Jensen (1996) who suggest that there exist a negative relation between institutional ownership and Leverage.

Institutions as investors have greater expertise in gathering and interpreting information on firms, and have more incentives to closely oversee managerial activities with an increase in their equity ownership. This implies that institutional ownership may serve as substitutes to leverage in controlling managerial self-interest. Institutional investors impose their managerial preferences through the governance process.

Further the -0.06 correlation suggest a weak negative correlation.

Table 5: Correlation Between Percentage owned by individuals and Capital structure

| Year | Correlation |
|------|-------------|
| 1998 | -0.0743500 |
| 1999 | -0.0413319 |
| 2000 | -0.0360580 |
| 2001 | -0.1974162 |
| 2002 | -0.0606225 |

Average -0.0819557

The correlation 'r' is -0.08 . Implying a negative correlation between percentage owned by individuals and capital structure. This implies that, as the percentage owned by individuals increase the amount of debt-borrowed decreases. A largely diversified company the fear of loss of control is not an issue; the main concern of the shareholders is dividend and capital gains. This in itself is a disciplinary measure as, the managers are kept in line otherwise the shareholders will simply take off to another company once their need for dividend and capital gains are not met. It follows that if many shareholders are selling off the shares, chances are the rush of many of them to sell off is likely to reduce the value of shares.

The correlation 'r' of -0.08 indicates a weak negative relationship.

Table 6: Correlation Between Percentage owned by Foreigners and Capital Structure.

| Year | Correlation |
|------|-------------|
| 1998 | -0.0194309 |
| 1999 | -0.0238870 |
| 2000 | -0.1396536 |
| 2001 | -0.1577446 |
| 2002 | -0.199039 |

Average -0.107951

The correlation 'r' is -0.11 .

The above correlation indicates a negative correlation between percentage owned by foreign investors and the capital structure. The foreign investors who include institutions outside the country have the experience, resources and expertise in gathering and interpreting information on firms, and have more incentives to closely oversee

managerial activities with an increase in their equity ownership. This implies that foreign investors may serve as substitutes to leverage in controlling managerial self-interest. Institutional investors impose their managerial preferences through the governance process.

In addition, the correlation 'r' of $-.011$ for foreign investors is stronger than those of individuals and local institutions. That is the higher the percentage of Foreign investors, the lower the likely hood of using borrowed funds, as a measure of ensuring the objectives of the shareholders are met.

5. SUMMARY OF FINDINGS AND CONCLUSIONS

5.1 Summary of Findings

The objective of this study was to investigate the relationship of ownership structure if any, on the capital structure of companies listed at the Nairobi Stock Exchange. The results so found out suggest that firms owned by the State are more likely to borrow than firms owned by individuals, institutions or foreign investors. This may imply anything from easy access to debt for companies with state's interest to preference to debt as a disciplinary measure for such companies.

Individuals and Institution shareholders have a negative effect on leverage. Implying the varied shareholders offer quite adequate funds for the operations of a firm such that borrowed funds are either minimized or simply avoided.

For Foreign investors in relation to capital structure there is a stronger negative correlation. Implying that firms with significant higher foreign interest largely avoid debt. This may be attributed to their good performance and hence ability to plough back the earnings and the ability of the shareholders to raise adequate funds.

All in all the observation drawn shows the reluctance of firms from borrowing. This may be attributed to many other factors as the ownership structure influences as follows; the state 55%, individuals 6%, institutions 8% and 11% or foreign investors. Hence the State and Foreign investors have a stronger influence on leverage than individuals and institutions.

5.2 Recommendations

From the findings of this study, we see a scenario of firms with some percentage of state ownership borrowing more as the interest of the state increases. Which is not so for individual, institutions and foreign investors. Yet according to MM (1963), value of the firm will increase with debt due to deductibility of the interest charged for tax computation, and the value of the levered firm will be higher than that of the unlevered firm. This however does not mean that the state sponsored firms have a higher value than others, quite to the contrary; Oltetia (2002) in his findings, concluded that state ownership has a significant negative effect on value of the firm.

This means then that the advantages of debt could be outweighed by the cost of taxes and bankruptcy. Hence, tax policies should be reduced and the laws of bankruptcy revised, such that the costs are minimal enough to encourage borrowing.

In addition, the findings also indicate that there is a trend to avoid debt for companies without state interests. Suggesting that debt is still avoided as much as MM (1963) hypothesis suggests an increase in value due to tax shield. This could be due to high levels interest of debt, which may be too high for the company to service in comparison to the earnings of the firm. Therefore, lending institution should offer funds for borrowing at reasonable rates that will attract corporate borrowers and even off shore borrowers who seem to have an even greater aversion to debt.

5.3 Limitations of the Study

The study concentrated on firms quoted at the Nairobi Stock Exchange and specifically on firms in the Main Investment Market Segment. The results should therefore be translated with caution as the study excluded many well performing firms not quoted in the stock Exchange and firms in the Alternative Investment Market Segment.

In addition, while interpreting results of correlation it should be done with caution as the finding showing that correlation exist does not necessarily mean a cause and effect is established. This does not mean then that correlation is irrelevant, it may give suggestions that causal relationships might exist in areas that were not previously suspected (Owen and Jones 1981). On the other hand low correlation does not necessarily mean a low degree of association, as the relationship might be curvilinear.

5.4 Suggestions For Further Research.

The study focused on the relationship between ownership Structure and Capital Structure for the years 1998 to 2002. This is a period before the Foreign Investor regulation put down by Capital Market Authority; where each company shall reserve at least 25% of its ordinary shares for investment by locals. This means that, with the implementation of this regulation the ownership structures will change and research can be done to see the effect of the change on capital structure.

In addition, research can be done on the effect of block ownership, and inside ownership on the capital structure. That is, whether large shareholders improve corporate performance by encouraging performance-tilting, the practice which arises under asymmetric information between shareholders and managers resulting in improvements of corporate performance without the diminution of managerial effort or of excess pay. This is because large shareholders can exploit economies of scale in information costs, which reduces the agency (monitoring) costs of debt.

Along the same lines, investigations can be done on whether there is a systematic relationship between insider (manager) holdings and debt.

REFERENCES

Amihud Y., Baruch L., and Tavlou, N.G. (1990), "Corporate Control and the Choice of Investment Financing: The case of Corporate Acquisition", **Journal of Finance** 45:603-616

Bancel F., Mitou, U. R.(2002), "The Determinants of Capital Structure Choice: A survey of European Firm". **Working Papers, University of Manitoba, Canada.**

Barton, S. and Gordon, P. (1988), "Corporate Strategy and Capital Structure", **Strategic Management Journal** 9:623-632.

Bebchuk, I. (1999), "A Rent Protection Theory of Ownership and Control", **Working Paper, Havard University**

Bebchuk, I. (1999), "The Evolution of Ownership Structure in Publicly Traded Companies", **Working Paper, Havard University**

Brailsford T.J, Oliver B. and Pua, S. (2000), "Theory and Evidence on the Relationship between Ownership Structure and Capital Structure", **Department of Commerce, Australian National University, Australia.**

Brealy, R. and Myers S. (1984), "**Principles of Corporate Finance**", McGraw Hill: New York.

Chatrath A. (1994), "Financial Leverage and the Cost of Capital: A Reexamination of the Value Relevance of Capital Structure", **Unpublished PhD Dissertation, Cleveland State University: USA.**

Chen C., Steiner T. (1999), "Managerial ownership and agency conflict; a nonlinear simultaneous equation analysis of managerial ownership, risk taking, debt policy, and dividend policy", **Financial Review 34:119-136**

Coffee, J. (1999), "Privatization and Corporate Governance: The Lessons from Securities Market Failure", Mimeo, Columbia Law School.

Davies, J.R., Hillier, D. and McColgan, P. (2002), "Ownership Structure, Managerial Behavior and Corporate value", **Working Papers, University of Strathclyde, Glasgow**

De-Angelo H., Masulis R. (1980), "Optimal Capital Structure Under Corporate and Personal Taxation", **Journal of Financial Economics 8:329**

Demestz, H., Lehn, K. (1985), "The Structure of Corporate Ownership; Causes and Consequences", **Journal of Political Economics 93 No. 6:1155-1177**

Diamond, D.V. (1984), "Financial Intermediation and Delegated Monitoring", **Review of Economic Studies, 51:393:414**

- Donaldson, G. (1984), **Managing Corporate Wealth**, Prague: New York
- Firth, M. (1995), “ The Impact of Institutional Stockholders Interests on the Capital Structure of Firms”, **Managerial and Decision Economics** 16:167-175
- Friend, I., Hasbrook, I. (1988), “Determinants of Capital Structure”, **Research In Finance**, London: JAI Press
- Friend, I., Lang L.H. (1988), “An Empirical Test of the Impact of Managerial Self Interest on Corporate Capital Structure”, **Journal of Finance** 43:271-281
- Galai, D., and Masulis, R.(1976), “The Option Pricing Model and the Risk Factor of Stock”, **Journal of Financial Economics** 3:99-117
- Grossman, S., Hart, O. (1980), “Takeover Bids, The Free Rider Problem and the Theory of the Corporation”, **Bell Journal of Economics** 11(1):42-46
- Harijono, Ariff, M., Tanewski, G. A. (2004), “The Impact of Family Control of Firms on Leverage; Australian Evidence”, **Working Papers; Monash University; Australia**

Holderness, C.C., Sheehan, D.P. (1988), "The Role of Majority Shareholders in Publicly Held Corporations: An exploratory Analysis", **Journal of Financial Economics** 20:317-346

Jensen, M., Meckling, H. (1976), "Theory of the firm: Managerial Behavior, agency costs and ownership structure", **Journal of Financial Management** 3:305-360.

Kensinger, J., Martin, J. (1986), "Royalty Trusts; Master Partnerships and other Organizational Means of 'Unfirming' the Firm", **Midland Corporate Finance Journal**, Summer.

La-Porta, R., Lopez-de-Silanes, F., Shleifer, A. (1999), "Corporate Ownership around the World", **Journal of Finance** 54:471-518.

Mishra, C.S., McConaughy, D.I. (1999), "Founding Family Control and Capital Structure. The Risk of loss of Control and the aversion to Debt", **Entrepreneurship Theory and Practice**: 53-64

Modigliani, F., Miller, M. (1958), "The Cost of Capital, Corporation Finance and the Theory of Investment", **American Economic Review** 48,261-297.

Modigliani, F., Miller, M. (1963), "Corporate Income Taxes and the Firm's Choice of Capital Structure: A Correction", **American Economic Review** 53,433-443.

Myers, S.C., (1977), “Determinants of Corporate Borrowing” **Journal of Financial Economics 27**

Odinga, O. G., (2003), “Determinants of Capital Structure of Companies Listed at the Nairobi Stock Exchange”, **Unpublished MBA project, University of Nairobi.**

Oltetia, J.K., (2002), “Ownership Structure and the Financial Performance of Listed Companies in Kenya”, **Unpublished MBA project, University of Nairobi.**

Pandey, I.M. (1999), **Financial Management. 8th Edition.** Vikas Publishing House PVT Ltd. New Delhi.

Pound, J. (1988), Proxy Contests and the efficiency of shareholders oversight”, **Journal of Financial Economics 20:237-625**

Prasaad, S., Christopher J. G., and Victor M. (2001), “Company Financing, Capital Structure, and Ownership: A survey and Implications for Developing Economies”,

Rao, Ramesh K.S. (1989), **Fundamentals of Financial Management.** Macmillan Publishing Co. New York.

Roland, G., (2000), "Corporate Governance Systems and Restructuring: The lessons from the transition experience".

Ross, S. (1977), "The Determination of Financial Structures: An Incentive Signaling Approach", **Bell Journal of Economics** 8: 23-40

Shleifer, A., Vishny, R.W.(1989), "Management Entrenchment: The Case of Managerial Specific Investments", **Journal of Financial Economics** 25:123-129.

Shyam-Sunder, L. and Myers, S.C. (1999), "Testing Static Trade-off Against Pecking Order Model of Capital Structure", **Journal of Financial Economics** 51:219-244

Smith, C., Warner, J. (1979), "On Financing Contracting: An Analysis of Bond Covenants", **Journal of Financial Economics** 7:117-161

Stiglitz, J., Weiss, A. (1981), "Credit Rationing in Markets with Imperfect Information", **American Economic Review**, 71, 393-410.

Titman, S., Wessels, R. (1988), " The Determinants of Capital Structure Choice", **Journal of Finance**. March.

Van Horne, J.C. (2002), **Financial Management and Policy**. 12th Ed. Prentice Hall: New Jersey.

Vera –Antonio, M. and Ugedo- Juan F., “Does Ownership Structure Affect Value? Evidence from the Spanish Capital Market” **G32,G34**

Whitley, R. (1992), **Business Systems in East Asia Firms, Markets and Societies:** Sage, UK.

Wiwattanakantan, Y. (1999), “ The Determinants of Capital Structure of Thai Firms”, **Pacific Basic Finance Journal** 7:371- 403.

Wu, L. (2004), “Impact of Ownership Structure on Debt Financing of Japanese Firms With the Agency Cost of Free Cash Flow”, City University : Hong Kong.

APPENDICES

Appendix I Capital Structure 1998

| | Company Name | Book Value of Total Debt (TD) | Market Value of Equity (MVE) | Book Value of TD + MVE | Capital Structure |
|----|---------------------|----------------------------------|---------------------------------|---------------------------|----------------------|
| | | Kshs (000) | Kshs (000) | Kshs (000) | |
| 1 | Brooke Bond | 42,351 | 68,913,750,000 | 68,913,792,351 | 0.00000061455 |
| 2 | Kakuzi | 298,815 | 2,763,598,872 | 2,763,897,687 | 0.00010811363 |
| 3 | Rea Vipingo | 4,402 | 390,000,000 | 390,004,402 | 0.00001128705 |
| 4 | Sasini Tea & Coffee | 151,976 | 2,964,721,500 | 2,964,873,476 | 0.00005125885 |
| 5 | CMC Holdings | 85,921 | 874,064,160 | 874,150,081 | 0.00009829090 |
| 6 | Kenya Airways | 3,122,000 | 3,369,790,843 | 3,372,912,843 | 0.00092560945 |
| 7 | Marshalls (E.A) | 27,274 | 604,510,452 | 604,537,726 | 0.00004511546 |
| 8 | Nation Media G | 247,000 | 4,884,410,310 | 4,884,657,310 | 0.00005056650 |
| 9 | Tourism Promotion | 128,532 | 560,485,500 | 560,614,032 | 0.00022927004 |
| 10 | Uchumi | - | 2,760,000,000 | 2,760,000,000 | - |
| 11 | Bamburi Cement | - | 13,065,542,100 | 13,065,542,100 | - |
| 12 | BAT | - | 5,737,500,000 | 5,737,500,000 | - |
| 13 | BOC Kenya | - | 1,366,781,220 | 1,366,781,220 | - |
| 14 | Carbacid | - | 613,532,595 | 613,532,595 | - |
| 15 | East African Cables | | 405,000,000 | 405,000,000 | - |
| 16 | E.A. Portland | 198,770 | 2,115,000,000 | 2,115,198,770 | 0.00009397226 |
| 17 | EABL | 208,130 | 4,340,804,463 | 4,341,012,593 | 0.00004794503 |
| 18 | Firestone | | 4,481,312,640 | 4,481,312,640 | - |
| 19 | Kenya Oil Co. | 66,211 | 421,188,300 | 421,254,511 | 0.00015717576 |
| 20 | K.P.L.C | 1,153,273 | 10,022,880,000 | 10,024,033,273 | 0.00011505080 |
| 21 | Unga Group | | 2,647,519,827 | 2,647,519,827 | - |
| | Average | | | | 0.00009210811 |

Capital Structure 1999

| | Company Name | Book Value of Total Debt (TD) | Market Value of Equity (MVE) | Book Value of TD + MVE | Capital Structure |
|----|---------------------|----------------------------------|---------------------------------|---------------------------|----------------------|
| | | Kshs (000) | Kshs (000) | Kshs (000) | |
| 1 | Brooke Bond | 1,361,594 | 5,083,000,000 | 5,084,361,594 | 0.0002678 |
| 2 | Kakuzi | 569,272 | 1,705,199,913 | 1,705,769,185 | 0.000333733 |
| 3 | Rea Vipingo | 11,198 | 276,000,000 | 276,011,198 | 4.05708E-05 |
| 4 | Sasini Tea & Coffee | 132,378 | 2,109,513,375 | 2,109,645,753 | 6.27489E-05 |
| 5 | CMC Holdings | 99,505 | 728,385,000 | 728,484,505 | 0.000136592 |
| 6 | Kenya Airways | 6,048,000 | 3,692,921,472 | 3,698,969,472 | 0.00163505 |
| 7 | Marshalls (E.A) | 7,779 | 374,220,756 | 374,228,535 | 2.07868E-05 |
| 8 | Nation Media G | 151,600 | 3,565,263,000 | 3,565,414,600 | 4.25196E-05 |
| 9 | Tourism Promotion | 300,052 | 620,797,950 | 621,098,002 | 0.000483099 |
| 10 | Uchumi | - | 2,880,000,000 | 2,880,000,000 | 0 |
| 11 | Bamburi Cement | 2,254,000 | 9,527,194,031 | 9,529,448,031 | 0.00023653 |
| 12 | BAT | 821,607 | 5,812,500,000 | 5,813,321,607 | 0.000141332 |
| 13 | BOC Kenya | 46,708 | 1,366,781,220 | 1,366,827,928 | 3.41726E-05 |
| 14 | Carbacid | - | 679,605,336 | 679,605,336 | 0 |
| 15 | East African Cables | 4,506 | 263,250,000 | 263,254,506 | 1.71165E-05 |
| 16 | E.A. Portland | 329,024 | 1,260,000,000 | 1,260,329,024 | 0.000261062 |
| 17 | EABL | 1,120,231 | 7,300,975,656 | 7,302,095,887 | 0.000153412 |
| 18 | Firestone | 213,035 | 4,453,478,400 | 4,453,691,435 | 4.78334E-05 |
| 19 | Kenya Oil Co. | 67,825 | 413,988,500 | 414,056,325 | 0.000163806 |
| 20 | K.P.L.C | 1,239,483 | 8,941,464,000 | 8,942,703,483 | 0.000138603 |
| 21 | Unga Group | 252,820 | 1,511,194,946 | 1,511,447,766 | 0.00016727 |

Average

0.000208764

Capital Structure 2000

| | Company Name | Book Value of Total Debt (TD) | Market Value of Equity (MVE) | Book Value of TD + MVE | Capital Structure |
|----|---------------------|----------------------------------|---------------------------------|---------------------------|----------------------|
| | | Kshs (000) | Kshs (000) | Kshs (000) | |
| 1 | Brooke Bond | 1,351,489 | 4,740,875,000 | 4,742,226,489 | 0.00028499 |
| 2 | Kakuzi | 510,669 | 1,077,999,945 | 1,078,510,614 | 0.000473495 |
| 3 | Rea Vipingo | 157,966 | 222,000,000 | 222,157,966 | 0.000711053 |
| 4 | Sasini Tea & Coffee | 83,935 | 1,320,821,438 | 1,320,905,373 | 6.35435E-05 |
| 5 | CMC Holdings | 493,793 | 388,472,960 | 388,966,753 | 0.001269499 |
| 6 | Kenya Airways | 8,003,000 | 3,462,116,130 | 3,470,119,130 | 0.002306261 |
| 7 | Marshalls (E.A) | 43,558 | 338,237,991 | 338,281,549 | 0.000128763 |
| 8 | Nation Media G | 323,600 | 2,460,031,470 | 2,460,355,070 | 0.000131526 |
| 9 | Tourism Promotion | 340,875 | 611,128,200 | 611,469,075 | 0.000557469 |
| 10 | Uchumi | - | 2,565,000,000 | 2,565,000,000 | 0 |
| 11 | Bamburi Cement | 2,810,000 | 12,340,637,450 | 12,343,447,450 | 0.000227651 |
| 12 | BAT | 566,383 | 6,050,000,000 | 6,050,566,383 | 9.36083E-05 |
| 13 | BOC Kenya | 47,746 | 839,594,178 | 839,641,924 | 5.68647E-05 |
| 14 | Carbacid | 48,819 | 462,509,187 | 462,558,006 | 0.000105541 |
| 15 | East African Cables | 3,426 | 187,312,500 | 187,315,926 | 1.829E-05 |
| 16 | E.A. Portland | 362,175 | 1,116,000,000 | 1,116,362,175 | 0.000324424 |
| 17 | EABL | 363,407 | 6,260,156,081 | 6,260,519,488 | 5.80474E-05 |
| 18 | Firestone | 129,252 | 3,199,787,520 | 3,199,916,772 | 4.03923E-05 |
| 19 | Kenya Oil Co. | 66,622 | 816,448,572 | 816,515,194 | 8.15931E-05 |
| 20 | K.P.L.C | 5,334,914 | 4,075,092,000 | 4,080,426,914 | 0.00130744 |
| 21 | Unga Group | 118,388 | 721,624,873 | 721,743,261 | 0.000164031 |
| | Average | | | | 0.000400213 |

Capital Structure 2001

| | Company Name | Book Value of Total Debt (TD) | Market Value of Equity (MVE) | Book Value of TD + MVE | Capital Structure |
|----|---------------------|----------------------------------|---------------------------------|---------------------------|----------------------|
| | | Kshs (000) | Kshs (000) | Kshs (000) | Kshs (000) |
| 1 | Brooke Bond | 1,487,929 | 3,519,000,000 | 3,520,487,929 | 0.000422649 |
| 2 | Kakuzi | 446,501 | 705,599,964 | 706,046,465 | 0.000632396 |
| 3 | Rea Vipingo | 176,103 | 174,000,000 | 174,176,103 | 0.001011063 |
| 4 | Sasini Tea & Coffee | 65,591 | 752,583,150 | 752,648,741 | 8.71469E-05 |
| 5 | CMC Holdings | 322,311 | 218,516,040 | 218,838,351 | 0.001472827 |
| 6 | Kenya Airways | 8,664,000 | 3,485,196,904 | 3,493,860,904 | 0.002479778 |
| 7 | Marshalls (E.A) | 44,068 | 263,393,840 | 263,437,908 | 0.00016728 |
| 8 | Nation Media G | 118,200 | 1,541,976,248 | 1,542,094,448 | 7.6649E-05 |
| 9 | Tourism Promotion | 450,790 | 657,543,000 | 657,993,790 | 0.000685098 |
| 10 | Uchumi Supermarkets | - | 2,730,000,000 | 2,730,000,000 | 0 |
| 11 | Bamburi Cement | 2,900,000 | 6,061,415,718 | 6,064,315,718 | 0.000478207 |
| 12 | BAT | 558,088 | 4,900,000,000 | 4,900,558,088 | 0.000113883 |
| 13 | BOC Kenya | 43,159 | 585,763,380 | 585,806,539 | 7.36745E-05 |
| 14 | Carbacid | 73,230 | 396,436,425 | 396,509,655 | 0.000184687 |
| 15 | East African Cables | 22,529 | 186,300,000 | 186,322,529 | 0.000120914 |
| 16 | E.A. Portland | - | 990,000,000 | 990,000,000 | 0 |
| 17 | EABL | 943,097 | 8,405,849,900 | 8,406,792,997 | 0.000112183 |
| 18 | Firestone | 142,794 | 1,948,396,800 | 1,948,539,594 | 7.32826E-05 |
| 19 | Kenya Oil Co. | 210,834 | 690,453,422 | 690,664,256 | 0.000305263 |
| 20 | K.P.L.C | 52,747,396 | 2,314,494,000 | 2,367,241,396 | 0.022282221 |
| 21 | Unga Group | 92,860 | 410,397,127 | 410,489,987 | 0.000226217 |
| | Average | | | | 0.001476448 |

Capital Structure 2002

| | Company Name | Book Value of Total Debt (TD) | Market Value of Equity (MVE) | Book Value of TD + MVE | Capital Structure |
|----|---------------------|----------------------------------|---------------------------------|---------------------------|----------------------|
| | | Kshs (000) | Kshs (000) | Kshs (000) | |
| 1 | Brooke Bond | 1,457,021 | 2,639,250,000 | 2,640,707,021 | 0.000551754 |
| 2 | Kakuzi | 435,901 | 287,139,985 | 287,575,886 | 0.001515777 |
| 3 | Rea Vipingo | 20,586 | 153,000,000 | 153,020,586 | 0.000134531 |
| 4 | Sasini Tea & Coffee | 115,980 | 501,722,100 | 501,838,080 | 0.00023111 |
| 5 | CMC Holdings | 266,470 | 418,822,410 | 419,088,880 | 0.000635832 |
| 6 | Kenya Airways | 7,659,000 | 3,623,681,549 | 3,631,340,549 | 0.002109138 |
| 7 | Marshalls (E.A) | - | 263,393,840 | 263,393,840 | 0 |
| 8 | Nation Media G | 60,300 | 4,492,231,380 | 4,492,291,680 | 1.3423E-05 |
| 9 | Tourism Promotion | 390,668 | 734,901,000 | 735,291,668 | 0.00053131 |
| 10 | Uchumi Supermarkets | - | 996,000,000 | 996,000,000 | 0 |
| 11 | Bamburi Cement | 2,429,000 | 15,879,457,344 | 15,881,886,344 | 0.000152942 |
| 12 | BAT | 623,765 | 5,400,000,000 | 5,400,623,765 | 0.000115499 |
| 13 | BOC Kenya | 43,652 | 522,293,750 | 522,337,402 | 8.35705E-05 |
| 14 | Carbacid | 75,271 | 404,931,491 | 405,006,762 | 0.000185851 |
| 15 | East African Cables | 21,866 | 186,300,000 | 186,321,866 | 0.000117356 |
| 16 | E.A. Portland | - | 1,125,000,000 | 1,125,000,000 | 0 |
| 17 | EABL | 1,195,828 | 8,995,016,745 | 8,996,212,573 | 0.000132926 |
| 18 | Firestone | 162,413 | 2,421,578,880 | 2,421,741,293 | 6.70646E-05 |
| 19 | Kenya Oil Co. | 274,057 | 816,448,572 | 816,722,629 | 0.000335557 |
| 20 | K.P.L.C | 17,704,461 | 684,457,200 | 702,161,661 | 0.025214223 |
| 21 | Unga Group | 793,929 | 217,113,319 | 217,907,248 | 0.003643426 |
| | Average | | | | 0.001703395 |

Appendix 2

AVERAGE OWNERSHIP STRUCTURE FROM 1998 TO 2002

| YEAR | STATE | INSTITUTION | INDIVIDUALS | FOREIGNERS |
|-------------|--------------|--------------------|--------------------|-------------------|
| 1998 | 0.041042 | 0.500940593 | 0.193867493 | 0.264149743 |
| 1999 | 0.044615 | 0.441429330 | 0.207512380 | 0.306443745 |
| 2000 | 0.048448 | 0.465150657 | 0.194739867 | 0.291661889 |
| 2001 | 0.038923 | 0.528356305 | 0.157664941 | 0.275055631 |
| 2002 | 0.041696 | 0.514849303 | 0.185611482 | 0.257843223 |

Average 0.04 0.49 0.19 0.28

Appendix 2

PERCENTAGE OWNERSHIP 1998

| COMPANY | STATE | % | INST. | % | INDIV | % | FORGN | % | TOTAL |
|----------------|-------------|--------------|-------------|--------------|------------|--------------|-------------|--------------|-------------|
| Brooke Bond | - | 0.000 | 4,074,328 | 0.083 | 1,664,162 | 0.034 | 43,136,510 | 0.883 | 48,875,000 |
| Kakuzi | - | 0.000 | 8,287,524 | 0.423 | 4,081,915 | 0.208 | 7,230,560 | 0.369 | 19,599,999 |
| Rea Vipingo | - | 0.000 | 23,129,047 | 0.385 | 10,391,311 | 0.173 | 26,479,642 | 0.441 | 60,000,000 |
| Sasini Tea | - | 0.000 | 21,516,392 | 0.566 | 12,102,971 | 0.318 | 4,389,886 | 0.115 | 38,009,249 |
| CMC Holdings | - | 0.000 | 13,837,994 | 0.570 | 9,616,233 | 0.396 | 825,632 | 0.034 | 24,279,859 |
| Kenya Airways | 106,171,561 | 0.230 | 106,651,204 | 0.231 | 68,186,836 | 0.148 | 180,605,882 | 0.391 | 461,615,483 |
| Marshalls | - | 0.000 | 8,460,426 | 0.588 | 5,409,125 | 0.376 | 523,554 | 0.036 | 14,393,105 |
| Nation Media | - | 0.000 | 15,301,563 | 0.429 | 4,067,504 | 0.114 | 16,283,562 | 0.457 | 35,652,629 |
| TPS | - | 0.000 | 34,450,347 | 0.891 | 4,199,126 | 0.109 | 29,527 | 0.001 | 38,679,000 |
| Uchumi | - | 0.000 | 25,133,284 | 0.419 | 19,747,581 | 0.329 | 15,119,135 | 0.252 | 60,000,000 |
| Bamburi | | 0.000 | 76,518,776 | 0.213 | 17,337,343 | 0.048 | 266,060,856 | 0.739 | 359,916,975 |
| BAT | | 0.000 | 56,789,693 | 0.400 | 40,066,426 | 0.282 | 45,137,023 | 0.318 | 141,993,142 |
| BOC Kenya | | 0.000 | 3,894,706 | 0.199 | 2,706,492 | 0.139 | 12,924,245 | 0.662 | 19,525,443 |
| Carbacid | | 0.000 | 7,985,733 | 0.846 | 987,001 | 0.105 | 466,229 | 0.049 | 9,438,963 |
| E. A Cables | | 0.000 | 14,978,739 | 0.740 | 5,262,800 | 0.260 | 8,416 | 0.000 | 20,249,955 |
| E.A. Portland | 22,799,507 | 0.253 | 24,896,653 | 0.277 | 15,917,532 | 0.177 | 26,386,309 | 0.293 | 90,000,001 |
| EABL | 675,755 | 0.007 | 67,710,504 | 0.723 | 14,858,574 | 0.159 | 10,357,419 | 0.111 | 93,602,252 |
| Firestone | - | 0.000 | 153,380,050 | 0.551 | 62,648,189 | 0.225 | 62,314,153 | 0.224 | 278,342,392 |
| Kenya Oil Co. | | 0.000 | 5,624,475 | 0.790 | 1,495,114 | 0.210 | | - | 7,119,589 |
| K.P.L.C | 20,387,216 | 0.371 | 15,969,692 | 0.291 | 10,858,329 | 0.198 | 7,686,763 | 0.140 | 54,902,000 |
| Unga Group | | 0.000 | 42,396,392 | 0.905 | 3,002,001 | 0.064 | 1,460,365 | 0.031 | 46,858,758 |
| AVERAGE | | 0.041 | | 0.501 | | 0.194 | | 0.264 | |

PERCENTAGE OWNERSHIP 1999

| COMPANY | STATE | % | INST | % | INDIV | % | FORGN | % | TOTAL |
|----------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|
| Brooke Bond | - | - | 4,476,022 | 0.09 | 1,262,468 | 0.03 | 43,136,510 | 0.88 | 48,875,000 |
| Kakuzi | - | - | 11,051,999 | 0.32 | 16,514,448 | 0.48 | 6,896,551 | 0.20 | 34,462,998 |
| Rea Vipingo | - | - | 29,336,711 | 0.49 | 4,383,647 | 0.07 | 26,279,642 | 0.44 | 60,000,000 |
| Sasini Tea | - | - | 25,731,431 | 0.68 | 8,426,847 | 0.22 | 3,850,972 | 0.10 | 38,009,250 |
| CMC Holdings | - | - | 14,099,636 | 0.58 | 9,450,784 | 0.39 | 729,440 | 0.03 | 24,279,860 |
| Kenya Airways | 106,171,561 | 0.23 | 121,755,321 | 0.26 | 88,167,568 | 0.19 | 145,521,033 | 0.32 | 461,615,483 |
| Marshalls | - | - | 7,067,900 | 0.49 | 6,790,728 | 0.47 | 534,478 | 0.04 | 14,393,106 |
| Nation Media | - | - | 12,977,276 | 0.36 | 6,391,792 | 0.18 | 16,283,562 | 0.46 | 35,652,630 |
| TPS | - | - | 35,977,458 | 0.93 | 2,666,428 | 0.07 | 35,114 | 0.00 | 38,679,000 |
| Uchumi | - | - | 32,692,928 | 0.54 | 13,353,449 | 0.22 | 13,953,622 | 0.23 | 59,999,999 |
| Bamburi | - | - | 69,070,125 | 0.19 | 27,786,825 | 0.08 | 266,060,025 | 0.73 | 362,916,975 |
| BAT | - | - | 17,044,036 | 0.23 | 12,857,782 | 0.17 | 45,098,181 | 0.60 | 74,999,999 |
| BOC Kenya | - | - | 4,092,745 | 0.21 | 2,508,456 | 0.13 | 12,824,245 | 0.66 | 19,425,446 |
| Carbacid | - | - | 6,792,055 | 0.72 | 2,180,679 | 0.23 | 466,229 | 0.05 | 9,438,963 |
| E. A Cables | - | - | 899,391 | 0.05 | 1,036,547 | 0.06 | 15,314,062 | 0.89 | 17,250,000 |
| E.A. Portland | 22,799,506 | 0.25 | 24,896,653 | 0.28 | 15,917,532 | 0.18 | 26,386,309 | 0.29 | 90,000,000 |
| EABL | 670,755 | 0.01 | 62,715,792 | 0.67 | 18,939,941 | 0.20 | 11,275,764 | 0.12 | 93,602,252 |
| Firestone | - | - | 161,847,530 | 0.58 | 55,306,535 | 0.20 | 61,188,328 | 0.22 | 278,342,393 |
| Kenya Oil Co. | - | - | 5,627,113 | 0.78 | 1,495,815 | 0.21 | 76,872 | 0.01 | 7,199,800 |
| K.P.L.C | 36,649,051 | 0.45 | 25,823,023 | 0.31 | 8,826,998 | 0.11 | 10,797,928 | 0.13 | 82,097,000 |
| Unga Group | - | - | 23,103,605 | 0.49 | 22,197,580 | 0.47 | 1,557,573 | 0.03 | 46,858,758 |
| AVERAGE | | 0.05 | | 0.44 | | 0.19 | | 0.32 | |

PERCENTAGE OWNERSHIP 2000

| COMPANY | STATE | % | INST | % | INDIV | % | FORGN | % | TOTAL |
|---------------|-------------|------|-------------|------|------------|------|-------------|------|-------------|
| Brooke Bond | - | - | 3,533,797 | 0.07 | 1,798,292 | 0.04 | 43,542,911 | 0.89 | 48,875,000 |
| Kakuzi | - | - | 8,898,462 | 0.45 | 3,813,626 | 0.19 | 6,887,911 | 0.35 | 19,599,999 |
| Rea Vipingo | - | - | 14,405,356 | 0.24 | 8,035,715 | 0.13 | 37,558,929 | 0.63 | 60,000,000 |
| Sasini Tea | - | - | 23,768,276 | 0.63 | 10,678,502 | 0.28 | 3,562,472 | 0.09 | 38,009,250 |
| CMC Holdings | - | - | 16,267,132 | 0.67 | 7,308,421 | 0.30 | 704,006 | 0.03 | 24,279,559 |
| Kenya Airways | 106,171,561 | 0.23 | 127,841,585 | 0.28 | 84,951,270 | 0.18 | 143,026,067 | 0.31 | 461,990,483 |
| Marshalls | - | - | 7,345,072 | 0.51 | 6,513,555 | 0.45 | 534,478 | 0.04 | 14,393,105 |
| Nation Media | - | - | 3,084,210 | 0.14 | 3,174,140 | 0.14 | 16,159,126 | 0.72 | 22,417,476 |
| TPS | - | - | 30,725,802 | 0.79 | 7,919,084 | 0.20 | 35,114 | 0.00 | 38,680,000 |
| Uchumi | 225,785 | 0.00 | 20,463,518 | 0.34 | 20,438,876 | 0.34 | 18,871,785 | 0.31 | 59,999,964 |
| Bamburi | - | - | 49,475,172 | 0.51 | 47,149,275 | 0.49 | 266,326 | 0.00 | 96,890,773 |
| BAT | - | - | 27,450,900 | 0.27 | 12,419,700 | 0.12 | 60,129,400 | 0.60 | 100,000,000 |
| BOC Kenya | - | - | 3,698,303 | 0.19 | 2,905,810 | 0.15 | 12,921,333 | 0.66 | 19,525,446 |
| Carbacid | - | - | 7,903,302 | 0.84 | 976,813 | 0.10 | 558,848 | 0.06 | 9,438,963 |
| E. A Cables | - | - | 2,956,486 | 0.15 | 1,970,991 | 0.10 | 15,322,523 | 0.76 | 20,250,000 |
| E.A. Portland | 22,799,505 | 0.26 | 31,792,710 | 0.37 | 5,874,129 | 0.07 | 26,386,309 | 0.30 | 86,852,653 |
| EABL | 376,487 | 0.00 | 69,569,260 | 0.74 | 12,380,741 | 0.13 | 11,275,764 | 0.12 | 93,602,252 |
| Firestone | - | - | 156,844,583 | 0.56 | 67,219,107 | 0.24 | 54,278,703 | 0.20 | 278,342,393 |
| Kenya Oil Co. | - | - | 6,242,064 | 0.87 | 885,009 | 0.12 | 72,727 | 0.01 | 7,199,800 |
| K.P.L.C | 40,932,351 | 0.52 | 27,988,295 | 0.35 | 9,213,116 | 0.12 | 994,238 | 0.01 | 79,128,000 |
| Unga Group | - | - | 41,061,325 | 0.80 | 9,175,501 | 0.18 | 1,407,441 | 0.03 | 51,644,267 |
| AVERAGE | | 0.05 | | 0.45 | | 0.20 | | 0.30 | |

PERCENTAGE OWNERSHIP 2001

| COMPANY | STATE | % | INST | % | INDIV | % | FORGN | % | TOTAL |
|---------------|-------------|------|-------------|------|------------|------|-------------|------|-------------|
| Brooke Bond | - | - | 4,495,980 | 0.09 | 1,242,708 | 0.03 | 43,136,312 | 0.88 | 48,875,000 |
| Kakuzi | - | - | 9,221,114 | 0.47 | 4,021,413 | 0.21 | 6,357,472 | 0.32 | 19,599,999 |
| Rea Vipingo | - | - | 24,225,501 | 0.40 | 10,382,357 | 0.17 | 25,392,142 | 0.42 | 60,000,000 |
| Sasini Tea | - | - | 30,494,893 | 0.80 | 5,952,569 | 0.16 | 1,608,969 | 0.04 | 38,056,431 |
| CMC Holdings | - | - | 17,504,094 | 0.72 | 6,086,960 | 0.25 | 688,506 | 0.03 | 24,279,560 |
| Kenya Airways | 106,171,561 | 0.23 | 127,494,418 | 0.28 | 87,717,056 | 0.19 | 140,607,448 | 0.30 | 461,990,483 |
| Marshalls | - | - | 8,176,591 | 0.57 | 5,682,037 | 0.39 | 534,478 | 0.04 | 14,393,106 |
| Nation Media | - | - | 1,043,089 | 0.05 | 2,911,682 | 0.15 | 16,075,697 | 0.80 | 20,030,468 |
| TPS | - | - | 29,948,842 | 0.77 | 8,682,429 | 0.22 | 47,729 | 0.00 | 38,679,000 |
| Uchumi | 255,785 | 0.00 | 32,151,899 | 0.54 | 18,159,092 | 0.30 | 9,463,224 | 0.16 | 60,030,000 |
| Bamburi | - | - | 81,273,520 | 0.22 | 15,631,499 | 0.04 | 266,045,906 | 0.73 | 362,950,925 |
| BAT | - | - | 28,949,993 | 0.28 | 15,631,499 | 0.15 | 60,087,300 | 0.57 | 104,668,792 |
| BOC Kenya | - | - | 4,940,641 | 0.25 | 1,664,628 | 0.09 | 12,920,177 | 0.66 | 19,525,446 |
| Carbacid | - | - | 10,204,532 | 0.90 | 601,683 | 0.05 | 520,540 | 0.05 | 11,326,755 |
| E. A Cables | - | - | 12,144,923 | 0.60 | 8,096,617 | 0.40 | 8,461 | 0.00 | 20,250,001 |
| E.A. Portland | 22,799,505 | 0.25 | 36,418,796 | 0.40 | 4,395,390 | 0.05 | 26,386,309 | 0.29 | 90,000,000 |
| EABL | 376,487 | 0.00 | 86,659,652 | 0.79 | 2,817,792 | 0.03 | 19,176,348 | 0.18 | 109,030,279 |
| Firestone | - | - | 215,672,356 | 0.77 | 14,310,331 | 0.05 | 48,359,706 | 0.17 | 278,342,393 |
| Kenya Oil Co. | - | - | 6,415,005 | 0.89 | 675,839 | 0.09 | 108,956 | 0.02 | 7,199,800 |
| K.P.L.C | 26,539,740 | 0.33 | 44,377,658 | 0.55 | 4,092,499 | 0.05 | 6,268,103 | 0.08 | 81,278,000 |
| Unga Group | - | - | 39,832,064 | 0.74 | 13,122,404 | 0.24 | 1,204,597 | 0.02 | 54,159,065 |
| AVERAGE | | 0.04 | | 0.52 | | 0.15 | | 0.29 | |

PERCENTAGE OWNERSHIP 2002

| COMPANY | STATE | % | INST | % | INDIV | % | FORGN | % | TOTAL |
|---------------|-------------|------|-------------|------|------------|------|-------------|------|-------------|
| Brooke Bond | - | - | - | - | 17,285,454 | 0.29 | 43,136,171 | 0.71 | 60,421,625 |
| Kakuzi | - | - | 10,414,997 | 0.14 | 2,848,952 | 0.04 | 63,360,050 | 0.83 | 76,623,999 |
| Rea Vipingo | - | - | 8,311,378 | 0.14 | 13,950,371 | 0.23 | 37,738,251 | 0.63 | 60,000,000 |
| Sasini Tea | - | - | 33,852,327 | 0.89 | 3,963,497 | 0.10 | 193,426 | 0.01 | 38,009,250 |
| CMC Holdings | - | - | 17,028,721 | 0.70 | 6,569,899 | 0.27 | 676,106 | 0.03 | 24,274,726 |
| Kenya Airways | 106,171,561 | 0.25 | 174,579,013 | 0.42 | 147,492 | 0.00 | 137,960,120 | 0.33 | 418,858,186 |
| Marshalls | - | - | 12,338,719 | 0.86 | 1,519,909 | 0.11 | 534,478 | 0.04 | 14,393,106 |
| Nation Media | - | - | 11,431,784 | 0.21 | 17,922,366 | 0.34 | 24,124,795 | 0.45 | 53,478,945 |
| TPS | - | - | 30,898,674 | 0.80 | 7,729,710 | 0.20 | 50,616 | 0.00 | 38,679,000 |
| Uchumi | 255,785 | - | - | - | - | - | - | - | 255,785 |
| Bamburi | - | - | 79,127,620 | 0.22 | 17,757,142 | 0.05 | 266,074,513 | 0.73 | 362,959,275 |
| BAT | - | - | 30,005,745 | 0.16 | 99,006,947 | 0.52 | 60,087,308 | 0.32 | 189,100,000 |
| BOC Kenya | - | - | 4,086,059 | 0.21 | 2,518,210 | 0.13 | 12,921,177 | 0.66 | 19,525,446 |
| Carbacid | - | - | 4,250,594 | 0.38 | 6,555,621 | 0.58 | 520,540 | 0.05 | 11,326,755 |
| E. A Cables | - | - | 17,121,878 | 0.88 | 2,255,315 | 0.12 | 8,461 | 0.00 | 19,385,654 |
| E.A. Portland | 22,799,505 | 0.20 | 61,774,314 | 0.55 | 770,807 | 0.01 | 26,388,859 | 0.24 | 111,733,485 |
| EABL | 376,487 | 0.00 | 26,584,033 | 0.24 | 16,307,444 | 0.15 | 66,138,775 | 0.60 | 109,406,739 |
| Firestone | - | - | 218,168,734 | 0.81 | 1,665,684 | 0.01 | 48,149,056 | 0.18 | 267,983,474 |
| Kenya Oil Co. | - | - | 8,803,193 | 0.95 | 352,457 | 0.04 | 108,956 | 0.01 | 9,264,606 |
| K.P.L.C | 26,539,740 | 0.25 | 63,543,849 | 0.60 | 12,995,227 | 0.12 | 2,588,924 | 0.02 | 105,667,740 |
| Unga Group | - | - | 41,474,363 | 0.66 | 20,312,544 | 0.32 | 1,303,821 | 0.02 | 63,090,728 |

AVERAGE

AVERAGE

0.04

0.51

0.19

0.26

Appendix 3

CORRELATION ANALYSIS FOR STATE OWNERSHIP 1998

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE | CORRELATION |
|----|---------------------|----------|-------------------|-------------|
| 1 | Brooke Bond | - | 6.1455E-07 | 0.475374155 |
| 2 | Kakuzi | - | 0.000108114 | |
| 3 | Rea Vipingo | - | 1.12871E-05 | |
| 4 | Sasini Tea & Coffee | - | 5.12588E-05 | |
| 5 | CMC Holdings | - | 9.82909E-05 | |
| 6 | Kenya Airways | 0.230000 | 0.000925609 | |
| 7 | Marshalls (E.A) | - | 4.51155E-05 | |
| 8 | Nation Media G | - | 5.05665E-05 | |
| 9 | Tourism Promotion | - | 0.00022927 | |
| 10 | Uchumi Supermarkets | - | 0 | |
| 11 | Bamburi Cement | - | 0 | |
| 12 | BAT | - | 0 | |
| 13 | BOC Kenya | - | 0 | |
| 14 | Carbacid | - | 0 | |
| 15 | East African Cables | - | 0 | |
| 16 | E.A. Portland | 0.253328 | 9.39723E-05 | |
| 17 | EABL | 0.007219 | 4.7945E-05 | |
| 18 | Firestone | - | 0 | |
| 19 | Kenya Oil Co. | - | 0.000157176 | |
| 20 | K.P.L.C | 0.371338 | 0.000115051 | |
| 21 | Unga Group | - | 0 | |

CORRELATION ANALYSIS FOR INSTITUTION OWNERSHIP 1998

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE | CORRELATION |
|----|---------------------|-------------|-------------------|--------------|
| 1 | Brooke Bond | 0.08336221 | 6.1455E-07 | -0.151422649 |
| 2 | Kakuzi | 0.422832879 | 0.000108114 | |
| 3 | Rea Vipingo | 0.385484117 | 1.12871E-05 | |
| 4 | Sasini Tea & Coffee | 0.56608306 | 5.12588E-05 | |
| 5 | CMC Holdings | 0.569937165 | 9.82909E-05 | |
| 6 | Kenya Airways | 0.231039053 | 0.000925609 | |
| 7 | Marshalls (E.A) | 0.587811039 | 4.51155E-05 | |
| 8 | Nation Media G | 0.429184703 | 5.05665E-05 | |
| 9 | Tourism Promotion | 0.890673156 | 0.00022927 | |
| 10 | Uchumi Supermarkets | 0.418888067 | 0 | |
| 11 | Bamburi Cement | 0.212601187 | 0 | |
| 12 | BAT | 0.399946731 | 0 | |
| 13 | BOC Kenya | 0.199468253 | 0 | |
| 14 | Carbacid | 0.846039231 | 0 | |
| 15 | East African Cables | 0.739692459 | 0 | |
| 16 | E.A. Portland | 0.276629476 | 9.39723E-05 | |
| 17 | EABL | 0.723385416 | 4.7945E-05 | |
| 18 | Firestone | 0.551048113 | 0 | |
| 19 | Kenya Oil Co. | 0.789999956 | 0.000157176 | |
| 20 | K.P.L.C | 0.290876325 | 0.000115051 | |
| 21 | Unga Group | 0.904769862 | 0 | |

CORRELATION ANALYSIS FOR INDIVIDUAL OWNERSHIP 1998

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE | CORRELATION |
|----|---------------------|------------|-------------------|--------------|
| 1 | Brooke Bond | 0.03404935 | 6.1455E-07 | -0.074349961 |
| 2 | Kakuzi | 0.20826098 | 0.000108114 | |
| 3 | Rea Vipingo | 0.17318852 | 1.12871E-05 | |
| 4 | Sasini Tea & Coffee | 0.31842173 | 5.12588E-05 | |
| 5 | CMC Holdings | 0.39605802 | 9.82909E-05 | |
| 6 | Kenya Airways | 0.14771349 | 0.000925609 | |
| 7 | Marshalls (E.A) | 0.37581363 | 4.51155E-05 | |
| 8 | Nation Media G | 0.11408707 | 5.05665E-05 | |
| 9 | Tourism Promotion | 0.10856346 | 0.00022927 | |
| 10 | Uchumi Supermarkets | 0.32912635 | 0 | |
| 11 | Bamburi Cement | 0.04817040 | 0 | |
| 12 | BAT | 0.28217156 | 0 | |
| 13 | BOC Kenya | 0.13861360 | 0 | |
| 14 | Carbacid | 0.10456668 | 0 | |
| 15 | East African Cables | 0.25989194 | 0 | |
| 16 | E.A. Portland | 0.17686147 | 9.39723E-05 | |
| 17 | EABL | 0.15874163 | 4.7945E-05 | |
| 18 | Firestone | 0.22507599 | 0 | |
| 19 | Kenya Oil Co. | 0.21000004 | 0.000157176 | |
| 20 | K.P.L.C | 0.19777657 | 0.000115051 | |
| 21 | Unga Group | 0.06406489 | 0 | |

CORRELATION ANALYSIS FOR FOREIGN OWNERSHIP 1999

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE | CORRELATION |
|----|---------------------|------------|-------------------|--------------|
| 1 | Brooke Bond | 0.88258844 | 0.0000061455 | -0.019430894 |
| 2 | Kakuzi | 0.36890614 | 0.00010811363 | |
| 3 | Rea Vipingo | 0.44132737 | 0.00001128705 | |
| 4 | Sasini Tea & Coffee | 0.11549520 | 0.00005125885 | |
| 5 | CMC Holdings | 0.03400481 | 0.00009829090 | |
| 6 | Kenya Airways | 0.39124745 | 0.00092560945 | |
| 7 | Marshalls (E.A) | 0.03637533 | 0.00004511546 | |
| 8 | Nation Media G | 0.45672823 | 0.00005056650 | |
| 9 | Tourism Promotion | 0.00076339 | 0.00022927004 | |
| 10 | Uchumi Supermarkets | 0.25198558 | - | |
| 11 | Bamburi Cement | 0.73922842 | - | |
| 12 | BAT | 0.31788171 | - | |
| 13 | BOC Kenya | 0.66191814 | - | |
| 14 | Carbacid | 0.04939409 | - | |
| 15 | East African Cables | 0.00041561 | - | |
| 16 | E.A. Portland | 0.29318121 | 0.00009397226 | |
| 17 | EABL | 0.11065352 | 0.00004794503 | |
| 18 | Firestone | 0.22387590 | - | |
| 19 | Kenya Oil Co. | - | 0.00015717576 | |
| 20 | K.P.L.C | 0.14000880 | 0.00011505080 | |
| 21 | Unga Group | 0.03116525 | - | |

CORRELATION ANALYSIS FOR STATE 1999

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE | CORRELATION |
|----|---------------------|----------|-------------------|-------------|
| 1 | Brooke Bond | - | 0.0002678 | 0.377692063 |
| 2 | Kakuzi | - | 0.000333733 | |
| 3 | Rea Vipingo | - | 4.05708E-05 | |
| 4 | Sasini Tea & Coffee | - | 6.27489E-05 | |
| 5 | CMC Holdings | - | 0.000136592 | |
| 6 | Kenya Airways | 0.230000 | 0.00163505 | |
| 7 | Marshalls (E.A) | - | 2.07868E-05 | |
| 8 | Nation Media G | - | 4.25196E-05 | |
| 9 | Tourism Promotion | - | 0.000483099 | |
| 10 | Uchumi Supermarkets | - | 0 | |
| 11 | Bamburi Cement | - | 0.00023653 | |
| 12 | BAT | - | 0.000141332 | |
| 13 | BOC Kenya | - | 3.41726E-05 | |
| 14 | Carbacid | - | 0 | |
| 15 | East African Cables | - | 1.71165E-05 | |
| 16 | E.A. Portland | 0.253328 | 0.000261062 | |
| 17 | EABL | 0.007166 | 0.000153412 | |
| 18 | Firestone | - | 4.78334E-05 | |
| 19 | Kenya Oil Co. | - | 0.000163806 | |
| 20 | K.P.L.C | 0.446412 | 0.000138603 | |
| 21 | Unga Group | - | 0.00016727 | |

CORRELATION ANALYSIS FOR INSTITUTIONS 1999

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE | CORRELATION |
|----|---------------------|-------------|-------------------|--------------|
| 1 | Brooke Bond | 0.091581013 | 0.0002678 | -0.128572925 |
| 2 | Kakuzi | 0.320691746 | 0.000333733 | |
| 3 | Rea Vipingo | 0.488945183 | 4.05708E-05 | |
| 4 | Sasini Tea & Coffee | 0.67697813 | 6.27489E-05 | |
| 5 | CMC Holdings | 0.580713233 | 0.000136592 | |
| 6 | Kenya Airways | 0.263759179 | 0.00163505 | |
| 7 | Marshalls (E.A) | 0.491061485 | 2.07868E-05 | |
| 8 | Nation Media G | 0.363992109 | 4.25196E-05 | |
| 9 | Tourism Promotion | 0.930154813 | 0.000483099 | |
| 10 | Uchumi Supermarkets | 0.544882142 | 0 | |
| 11 | Bamburi Cement | 0.190319356 | 0.00023653 | |
| 12 | BAT | 0.227253816 | 0.000141332 | |
| 13 | BOC Kenya | 0.210689886 | 3.41726E-05 | |
| 14 | Carbacid | 0.719576398 | 0 | |
| 15 | East African Cables | 0.052138609 | 1.71165E-05 | |
| 16 | E.A. Portland | 0.276629478 | 0.000261062 | |
| 17 | EABL | 0.670024392 | 0.000153412 | |
| 18 | Firestone | 0.581469205 | 4.78334E-05 | |
| 19 | Kenya Oil Co. | 0.781565182 | 0.000163806 | |
| 20 | K.P.L.C | 0.314542833 | 0.000138603 | |
| 21 | Unga Group | 0.493047746 | 0.00016727 | |

CORRELATION ANALYSIS FOR INDIVIDUALS 1999

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE | CORRELATION |
|----|---------------------|-----------|-------------------|-------------|
| 1 | Brooke Bond | 0.0258305 | 0.0002678 | -0.041332 |
| 2 | Kakuzi | 0.4791936 | 0.000333733 | |
| 3 | Rea Vipingo | 0.0730608 | 4.05708E-05 | |
| 4 | Sasini Tea & Coffee | 0.2217052 | 6.27489E-05 | |
| 5 | CMC Holdings | 0.3892438 | 0.000136592 | |
| 6 | Kenya Airways | 0.1909979 | 0.00163505 | |
| 7 | Marshalls (E.A) | 0.4718042 | 2.07868E-05 | |
| 8 | Nation Media G | 0.1792797 | 4.25196E-05 | |
| 9 | Tourism Promotion | 0.0689374 | 0.000483099 | |
| 10 | Uchumi Supermarkets | 0.2225575 | 0 | |
| 11 | Bamburi Cement | 0.0765652 | 0.00023653 | |
| 12 | BAT | 0.1714371 | 0.000141332 | |
| 13 | BOC Kenya | 0.1291325 | 3.41726E-05 | |
| 14 | Carbacid | 0.2310295 | 0 | |
| 15 | East African Cables | 0.0600897 | 1.71165E-05 | |
| 16 | E.A. Portland | 0.1768615 | 0.000261062 | |
| 17 | EABL | 0.2023449 | 0.000153412 | |
| 18 | Firestone | 0.1986996 | 4.78334E-05 | |
| 19 | Kenya Oil Co. | 0.2077579 | 0.000163806 | |
| 20 | K.P.L.C | 0.1075191 | 0.000138603 | |
| 21 | Unga Group | | 0.00016727 | |

CORRELATION ANALYSIS FOR FOREIGNERS 1999

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE | CORRELATION |
|----|---------------------|----------|-------------------|-------------|
| 1 | Brooke Bond | 0.882588 | 0.0002678 | -0.023887 |
| 2 | Kakuzi | 0.200115 | 0.000333733 | |
| 3 | Rea Vipingo | 0.437994 | 4.05708E-05 | |
| 4 | Sasini Tea & Coffee | 0.101317 | 6.27489E-05 | |
| 5 | CMC Holdings | 0.030043 | 0.000136592 | |
| 6 | Kenya Airways | 0.315243 | 0.00163505 | |
| 7 | Marshalls (E.A) | 0.037134 | 2.07868E-05 | |
| 8 | Nation Media G | 0.456728 | 4.25196E-05 | |
| 9 | Tourism Promotion | 0.000908 | 0.000483099 | |
| 10 | Uchumi Supermarkets | 0.232560 | 0 | |
| 11 | Bamburi Cement | 0.733115 | 0.00023653 | |
| 12 | BAT | 0.601309 | 0.000141332 | |
| 13 | BOC Kenya | 0.660178 | 3.41726E-05 | |
| 14 | Carbacid | 0.049394 | 0 | |
| 15 | East African Cables | 0.887772 | 1.71165E-05 | |
| 16 | E.A. Portland | 0.293181 | 0.000261062 | |
| 17 | EABL | 0.120465 | 0.000153412 | |
| 18 | Firestone | 0.219831 | 4.78334E-05 | |
| 19 | Kenya Oil Co. | 0.010677 | 0.000163806 | |
| 20 | K.P.L.C | 0.131526 | 0.000138603 | |
| 21 | Unga Group | 0.033240 | 0.00016727 | |

CORRELATION ANALYSIS FOR STATE OWNERSHIP 2000

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE |
|----|---------------------|----------|-------------------|
| 1 | Brooke Bond | - | 0.00028499 |
| 2 | Kakuzi | - | 0.000473495 |
| 3 | Rea Vipingo | - | 0.000711053 |
| 4 | Sasini Tea & Coffee | - | 6.35435E-05 |
| 5 | CMC Holdings | - | 0.001269499 |
| 6 | Kenya Airways | 0.229813 | 0.002306261 |
| 7 | Marshalls (E.A) | - | 0.000128763 |
| 8 | Nation Media G | - | 0.000131526 |
| 9 | Tourism Promotion | - | 0.000557469 |
| 10 | Uchumi Supermarkets | 0.003763 | 0 |
| 11 | Bamburi Cement | - | 0.000227651 |
| 12 | BAT | - | 9.36083E-05 |
| 13 | BOC Kenya | - | 5.68647E-05 |
| 14 | Carbacid | - | 0.000105541 |
| 15 | East African Cables | - | 1.829E-05 |
| 16 | E.A. Portland | 0.262508 | 0.000324424 |
| 17 | EABL | 0.004022 | 5.80474E-05 |
| 18 | Firestone | - | 4.03923E-05 |
| 19 | Kenya Oil Co. | - | 8.15931E-05 |
| 20 | K.P.L.C | 0.517293 | 0.00130744 |
| 21 | Unga Group | - | 0.000164031 |

CORRELATION
0.587996333

CORRELATION ANALYSIS FOR INSTITUTION OWNERSHIP 2000

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE |
|----|---------------------|----------|-------------------|
| 1 | Brooke Bond | 0.072303 | 0.00028499 |
| 2 | Kakuzi | 0.454003 | 0.000473495 |
| 3 | Rea Vipingo | 0.240089 | 0.000711053 |
| 4 | Sasini Tea & Coffee | 0.625329 | 6.35435E-05 |
| 5 | CMC Holdings | 0.669993 | 0.001269499 |
| 6 | Kenya Airways | 0.276719 | 0.002306261 |
| 7 | Marshalls (E.A) | 0.510319 | 0.000128763 |
| 8 | Nation Media G | 0.137581 | 0.000131526 |
| 9 | Tourism Promotion | 0.794359 | 0.000557469 |
| 10 | Uchumi Supermarkets | 0.341059 | 0 |
| 11 | Bamburi Cement | 0.510628 | 0.000227651 |
| 12 | BAT | 0.274509 | 9.36083E-05 |
| 13 | BOC Kenya | 0.189409 | 5.68647E-05 |
| 14 | Carbacid | 0.837306 | 0.000105541 |
| 15 | East African Cables | 0.145999 | 1.829E-05 |
| 16 | E.A. Portland | 0.366053 | 0.000324424 |
| 17 | EABL | 0.743243 | 5.80474E-05 |
| 18 | Firestone | 0.563495 | 4.03923E-05 |
| 19 | Kenya Oil Co. | 0.866977 | 8.15931E-05 |
| 20 | K.P.L.C | 0.353709 | 0.00130744 |
| 21 | Unga Group | 0.795080 | 0.000164031 |

CORRELATION
-0.122152409

CORRELATION ANALYSIS FOR INDIVIDUAL OWNERSHIP 2000

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE | CORRELATION |
|----|---------------------|----------|-------------------|-------------|
| 1 | Brooke Bond | 0.036794 | 0.00028499 | -0.036058 |
| 2 | Kakuzi | 0.194573 | 0.000473495 | |
| 3 | Rea Vipingo | 0.133929 | 0.000711053 | |
| 4 | Sasini Tea & Coffee | 0.280945 | 6.35435E-05 | |
| 5 | CMC Holdings | 0.301011 | 0.001269499 | |
| 6 | Kenya Airways | 0.183881 | 0.002306261 | |
| 7 | Marshalls (E.A) | 0.452547 | 0.000128763 | |
| 8 | Nation Media G | 0.141592 | 0.000131526 | |
| 9 | Tourism Promotion | 0.204733 | 0.000557469 | |
| 10 | Uchumi Supermarkets | 0.340648 | 0 | |
| 11 | Bamburi Cement | 0.486623 | 0.000227651 | |
| 12 | BAT | 0.124197 | 9.36083E-05 | |
| 13 | BOC Kenya | 0.148822 | 5.68647E-05 | |
| 14 | Carbacid | 0.103487 | 0.000105541 | |
| 15 | East African Cables | 0.097333 | 1.829E-05 | |
| 16 | E.A. Portland | 0.067633 | 0.000324424 | |
| 17 | EABL | 0.132270 | 5.80474E-05 | |
| 18 | Firestone | 0.241498 | 4.03923E-05 | |
| 19 | Kenya Oil Co. | 0.122921 | 8.15931E-05 | |
| 20 | K.P.L.C | 0.116433 | 0.00130744 | |
| 21 | Unga Group | 0.177667 | 0.000164031 | |

CORRELATION ANALYSIS FOR FOREIGN OWNERSHIP 2000

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE | CORRELATION |
|----|---------------------|----------|-------------------|-------------|
| 1 | Brooke Bond | 0.890904 | 0.00028499 | -0.139654 |
| 2 | Kakuzi | 0.351424 | 0.000473495 | |
| 3 | Rea Vipingo | 0.625982 | 0.000711053 | |
| 4 | Sasini Tea & Coffee | 0.093726 | 6.35435E-05 | |
| 5 | CMC Holdings | 0.028996 | 0.001269499 | |
| 6 | Kenya Airways | 0.309587 | 0.002306261 | |
| 7 | Marshalls (E.A) | 0.037134 | 0.000128763 | |
| 8 | Nation Media G | 0.720827 | 0.000131526 | |
| 9 | Tourism Promotion | 0.000908 | 0.000557469 | |
| 10 | Uchumi Supermarkets | 0.314530 | 0 | |
| 11 | Bamburi Cement | 0.002749 | 0.000227651 | |
| 12 | BAT | 0.601294 | 9.36083E-05 | |
| 13 | BOC Kenya | 0.661769 | 5.68647E-05 | |
| 14 | Carbacid | 0.059207 | 0.000105541 | |
| 15 | East African Cables | 0.756668 | 1.829E-05 | |
| 16 | E.A. Portland | 0.303805 | 0.000324424 | |
| 17 | EABL | 0.120465 | 5.80474E-05 | |
| 18 | Firestone | 0.195007 | 4.03923E-05 | |
| 19 | Kenya Oil Co. | 0.010101 | 8.15931E-05 | |
| 20 | K.P.L.C | 0.012565 | 0.00130744 | |
| 21 | Unga Group | 0.027253 | 0.000164031 | |

CORRELATION ANALYSIS FOR STATE OWNERSHIP 2001

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE | CORRELATION |
|----|---------------------|----------|-------------------|-------------|
| 1 | Brooke Bond | - | 0.000422649 | 0.705553 |
| 2 | Kakuzi | - | 0.000632396 | |
| 3 | Rea Vipingo | - | 0.001011063 | |
| 4 | Sasini Tea & Coffee | - | 8.71469E-05 | |
| 5 | CMC Holdings | - | 0.001472827 | |
| 6 | Kenya Airways | 0.229813 | 0.002479778 | |
| 7 | Marshalls (E.A) | - | 0.00016728 | |
| 8 | Nation Media G | - | 7.6649E-05 | |
| 9 | Tourism Promotion | - | 0.000685098 | |
| 10 | Uchumi Supermarkets | 0.004261 | 0 | |
| 11 | Bamburi Cement | - | 0.000478207 | |
| 12 | BAT | - | 0.000113883 | |
| 13 | BOC Kenya | - | 7.36745E-05 | |
| 14 | Carbacid | - | 0.000184687 | |
| 15 | East African Cables | - | 0.000120914 | |
| 16 | E.A. Portland | 0.253328 | 0 | |
| 17 | EABL | 0.003453 | 0.000112183 | |
| 18 | Firestone | - | 7.32826E-05 | |
| 19 | Kenya Oil Co. | - | 0.000305263 | |
| 20 | K.P.L.C | 0.326530 | 0.022282221 | |
| 21 | Unga Group | - | 0.000226217 | |

CORRELATION ANALYSIS FOR INSTITUTION OWNERSHIP 2001

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE | CORRELATION |
|----|---------------------|----------|-------------------|-------------|
| 1 | Brooke Bond | 0.091989 | 0.000422649 | -0.001801 |
| 2 | Kakuzi | 0.470465 | 0.000632396 | |
| 3 | Rea Vipingo | 0.403758 | 0.001011063 | |
| 4 | Sasini Tea & Coffee | 0.801307 | 8.71469E-05 | |
| 5 | CMC Holdings | 0.720940 | 0.001472827 | |
| 6 | Kenya Airways | 0.275968 | 0.002479778 | |
| 7 | Marshalls (E.A) | 0.568091 | 0.00016728 | |
| 8 | Nation Media G | 0.052075 | 7.6649E-05 | |
| 9 | Tourism Promotion | 0.774292 | 0.000685098 | |
| 10 | Uchumi Supermarkets | 0.535597 | 0 | |
| 11 | Bamburi Cement | 0.223924 | 0.000478207 | |
| 12 | BAT | 0.276587 | 0.000113883 | |
| 13 | BOC Kenya | 0.253036 | 7.36745E-05 | |
| 14 | Carbacid | 0.900923 | 0.000184687 | |
| 15 | East African Cables | 0.599749 | 0.000120914 | |
| 16 | E.A. Portland | 0.404653 | 0 | |
| 17 | EABL | 0.794822 | 0.000112183 | |
| 18 | Firestone | 0.774846 | 7.32826E-05 | |
| 19 | Kenya Oil Co. | 0.890998 | 0.000305263 | |
| 20 | K.P.L.C | 0.545998 | 0.022282221 | |
| | Unga Group | 0.735464 | 0.000226217 | |

CORRELATION ANALYSIS FOR INDIVIDUAL OWNERSHIP 2001

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE | CORRELATION |
|----|---------------------|-----------------|-------------------|-------------|
| 1 | Brooke Bond | 0.025426 | 0.000422649 | -0.1974162 |
| 2 | Kakuzi | 0.205174 | 0.000632396 | |
| 3 | Rea Vipingo | 0.173039 | 0.001011063 | |
| 4 | Sasini Tea & Coffee | 0.156414 | 8.71469E-05 | |
| 5 | CMC Holdings | 0.250703 | 0.001472827 | |
| 6 | Kenya Airways | 0.189868 | 0.002479778 | |
| 7 | Marshalls (E.A) | 0.394775 | 0.00016728 | |
| 8 | Nation Media G | 0.145363 | 7.6649E-05 | |
| 9 | Tourism Promotion | 0.224474 | 0.000685098 | |
| 10 | Uchumi Supermarkets | 0.302500 | 0 | |
| 11 | Bamburi Cement | 0.043068 | 0.000478207 | |
| 12 | BAT | 0.149342 | 0.000113883 | |
| 13 | BOC Kenya | 0.085254 | 7.36745E-05 | |
| 14 | Carbacid | 0.053121 | 0.000184687 | |
| 15 | East African Cables | 0.399833 | 0.000120914 | |
| 16 | E.A. Portland | 0.048838 | 0 | |
| 17 | EABL | 0.025844 | 0.000112183 | |
| 18 | Firestone | 0.051413 | 7.32826E-05 | |
| 19 | Kenya Oil Co. | 0.093869 | 0.000305263 | |
| 20 | K.P.L.C | 0.050352 | 0.022282221 | |
| 21 | Unga Group | 0.242294 | 0.000226217 | |

CORRELATION ANALYSIS FOR FOREIGN OWNERSHIP 2001

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE | CORRELATION |
|----|---------------------|----------|-------------------|-------------|
| 1 | Brooke Bond | 0.882584 | 0.000422649 | -0.1577446 |
| 2 | Kakuzi | 0.324361 | 0.000632396 | |
| 3 | Rea Vipingo | 0.423202 | 0.001011063 | |
| 4 | Sasini Tea & Coffee | 0.042279 | 8.71469E-05 | |
| 5 | CMC Holdings | 0.028357 | 0.001472827 | |
| 6 | Kenya Airways | 0.304351 | 0.002479778 | |
| 7 | Marshalls (E.A) | 0.037134 | 0.00016728 | |
| 8 | Nation Media G | 0.802562 | 7.6649E-05 | |
| 9 | Tourism Promotion | 0.001234 | 0.000685098 | |
| 10 | Uchumi Supermarkets | 0.157642 | 0 | |
| 11 | Bamburi Cement | 0.733008 | 0.000478207 | |
| 12 | BAT | 0.574071 | 0.000113883 | |
| 13 | BOC Kenya | 0.661710 | 7.36745E-05 | |
| 14 | Carbacid | 0.045957 | 0.000184687 | |
| 15 | East African Cables | 0.000418 | 0.000120914 | |
| 16 | E.A. Portland | 0.293181 | 0 | |
| 17 | EABL | 0.175881 | 0.000112183 | |
| 18 | Firestone | 0.173742 | 7.32826E-05 | |
| 19 | Kenya Oil Co. | 0.015133 | 0.000305263 | |
| 20 | K.P.L.C | 0.077119 | 0.022282221 | |
| 21 | Unga Group | 0.022242 | 0.000226217 | |

CORRELATION ANALYSIS FOR STATE OWNERSHIP 2002

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE | CORRELATION |
|----|---------------------|----------|-------------------|-------------|
| 1 | Brooke Bond | - | 0.000551754 | 0.606128 |
| 2 | Kakuzi | - | 0.001515777 | |
| 3 | Rea Vipingo | - | 0.000134531 | |
| 4 | Sasini Tea & Coffee | - | 0.00023111 | |
| 5 | CMC Holdings | - | 0.000635832 | |
| 6 | Kenya Airways | 0.253479 | 0.002109138 | |
| 7 | Marshalls (E.A) | - | 0 | |
| 8 | Nation Media G | - | 1.3423E-05 | |
| 9 | Tourism Promotion | - | 0.00053131 | |
| 10 | Uchumi Supermarkets | - | 0 | |
| 11 | Bamburi Cement | - | 0.000152942 | |
| 12 | BAT | - | 0.000115499 | |
| 13 | BOC Kenya | - | 8.35705E-05 | |
| 14 | Carbacid | - | 0.000185851 | |
| 15 | East African Cables | - | 0.000117356 | |
| 16 | E.A. Portland | 0.204053 | 0 | |
| 17 | EABL | 0.003441 | 0.000132926 | |
| 18 | Firestone | - | 6.70646E-05 | |
| 19 | Kenya Oil Co. | - | 0.000335557 | |
| 20 | K.P.L.C | 0.251162 | 0.025214223 | |
| 21 | Unga Group | - | 0.003643426 | |

CORRELATION ANALYSIS FOR INSTITUTION OWNERSHIP 2002

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE | CORRELATION |
|----|---------------------|----------|-------------------|-------------|
| 1 | Brooke Bond | - | 0.000551754 | 0.103947 |
| 2 | Kakuzi | 0.135923 | 0.001515777 | |
| 3 | Rea Vipingo | 0.138523 | 0.000134531 | |
| 4 | Sasini Tea & Coffee | 0.890634 | 0.00023111 | |
| 5 | CMC Holdings | 0.701500 | 0.000635832 | |
| 6 | Kenya Airways | 0.416797 | 0.002109138 | |
| 7 | Marshalls (E.A) | 0.857266 | 0 | |
| 8 | Nation Media G | 0.213762 | 1.3423E-05 | |
| 9 | Tourism Promotion | 0.798849 | 0.00053131 | |
| 10 | Uchumi Supermarkets | - | 0 | |
| 11 | Bamburi Cement | 0.218007 | 0.000152942 | |
| 12 | BAT | 0.158677 | 0.000115499 | |
| 13 | BOC Kenya | 0.209268 | 8.35705E-05 | |
| 14 | Carbacid | 0.375270 | 0.000185851 | |
| 15 | East African Cables | 0.883224 | 0.000117356 | |
| 16 | E.A. Portland | 0.552872 | 0 | |
| 17 | EABL | 0.242984 | 0.000132926 | |
| 18 | Firestone | 0.814113 | 6.70646E-05 | |
| 19 | Kenya Oil Co. | 0.950196 | 0.000335557 | |
| 20 | K.P.L.C | 0.601355 | 0.025214223 | |
| 21 | Unga Group | 0.657377 | 0.003643426 | |

CORRELATION ANALYSIS FOR INDIVIDUAL OWNERSHIP 2000

| | COMPANY NAME | %AGE HELD | CAPITAL STRUCTURE | CORRELATION |
|----|---------------------|-------------|-------------------|--------------|
| 1 | Brooke Bond | 0.286080588 | 0.000551754 | -0.060622502 |
| 2 | Kakuzi | 0.037180936 | 0.001515777 | |
| 3 | Rea Vipingo | 0.232506183 | 0.000134531 | |
| 4 | Sasini Tea & Coffee | 0.104277169 | 0.00023111 | |
| 5 | CMC Holdings | 0.27064771 | 0.000635832 | |
| 6 | Kenya Airways | 0.000352129 | 0.002109138 | |
| 7 | Marshalls (E.A) | 0.105599792 | 0 | |
| 8 | Nation Media G | 0.335129386 | 1.3423E-05 | |
| 9 | Tourism Promotion | 0.19984255 | 0.00053131 | |
| 10 | Uchumi Supermarkets | 0 | 0 | |
| 11 | Bamburi Cement | 0.048923235 | 0.000152942 | |
| 12 | BAT | 0.52356926 | 0.000115499 | |
| 13 | BOC Kenya | 0.128970678 | 8.35705E-05 | |
| 14 | Carbacid | 0.578773091 | 0.000185851 | |
| 15 | East African Cables | 0.116339382 | 0.000117356 | |
| 16 | E.A. Portland | 0.006898621 | 0 | |
| 17 | EABL | 0.149053378 | 0.000132926 | |
| 18 | Firestone | 0.006215622 | 6.70646E-05 | |
| 19 | Kenya Oil Co. | 0.038043388 | 0.000335557 | |
| 20 | K.P.L.C | 0.122981972 | 0.025214223 | |
| 21 | Unga Group | 0.321957673 | 0.003643426 | |

CORRELATION ANALYSIS FOR FOREIGN OWNERSHIP 2002

| | COMPANY NAME | EQUITY | CAPITAL STRUCTURE | CORRELATION |
|--|---------------------|-------------|-------------------|--------------|
| | Brooke Bond | 0.713919 | 0.000551754 | -0.199038773 |
| | Kakuzi | 0.826896 | 0.001515777 | |
| | Rea Vipingo | 0.628971 | 0.000134531 | |
| | Sasini Tea & Coffee | 0.005089 | 0.00023111 | |
| | CMC Holdings | 0.027852 | 0.000635832 | |
| | Kenya Airways | 0.329372 | 0.002109138 | |
| | Marshalls (E.A) | 0.037134 | 0 | |
| | Nation Media G | 0.451108 | 1.3423E-05 | |
| | Tourism Promotion | 0.001309 | 0.00053131 | |
| | Uchumi Supermarkets | - | 0 | |
| | Bamburi Cement | 0.733070 | 0.000152942 | |
| | BAT | 0.317754 | 0.000115499 | |
| | BOC Kenya | 0.661761 | 8.35705E-05 | |
| | Carbacid | 0.045957 | 0.000185851 | |
| | East African Cables | 0.000436 | 0.000117356 | |
| | E.A. Portland | 0.236177 | 0 | |
| | EABL | 0.604522 | 0.000132926 | |
| | Firestone | 0.179672 | 6.70646E-05 | |
| | Kenya Oil Co. | 0.011760 | 0.000335557 | |
| | K.P.L.C | 0.024500609 | 0.025214223 | |
| | Unga Group | 0.02066581 | 0.003643426 | |