The Effect of Capital Structure Gearing Levels on Financial Performance of Public and Private Sector Firms in Kenya’s Coastal Counties

Swalhah Ibrahim Yusuf¹, Samuel M. Mwakubo¹ & Scaver N.Mwakachola¹

¹ Department of Business Management and Economics, School of Business and Economics, Pwani University, Kenya

Correspondence: Swalhah Ibrahim Yusuf, Department of Business Management and Economics, School of Business and Economics, Pwani University, Kenya. E-mail: swaz.ibra48@gmail.com

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Abstract

Soon after independence in 1963, many firms including those in productive public and private sectors were set up in Kenya to produce goods and services for consumption in Kenya and beyond. Some public and private firms were set up in Kenya’s coastal counties while some were set up in other parts of Kenya. As at June 1990 however, most of these firms were either collapsed and liquidated or were ailing. Few were performing fairly. By 2015, there were 194 public firms which were in operations. Many of these however were formed after 1990. 46.4% of these had poor financial performance as measured by accounting and market ratios (ROE and ROA). About 35 of these firms, among them sugar firms and local authorities had more operating expenses than revenue. Postal Corporation of Kenya for example made KES 2.6b in revenues. Operating expenses however were KES 4.16b. National Oil Corporation of Kenya (NOCK) made KES 24.76b in revenues. Cost of sales excluding operating expenses however were KES 22.95b (Kenya’s treasury department, statement, 2015). In the small enterprise segment, about 300,000 SME’s were set up in 2010. About 350,000 SME’s were set up in 2012. However 2.2m SME’s closed down in six years ending 2015. About 35% of these closed down in 2015. Overall, about 96% of the firms which are set up in Kenya to produce goods and services for consumption in Kenya and beyond. Some public and private sector firms in Kenya’s coastal counties.

This constituted a research gap to be filled by this study to add to the body of knowledge and literature. The capital structure gearing level is the proportion of external finance used in financing a firm. This proportion (gearing) may vary between 0 to 100% (Brealey & Myers, 1991). Some firms however have a proportion ranging between 0 and <30% (LG), 30%-35% (MG1) ≥35%<40% (MG2) ≥40%≤60% (MG3) and ≥60% (HG). The external finance may be in form of short term and long term debt and equity finance. Debt carries a fixed slice of earnings. The gearing levels therefore debt levels will carry a proportionate fixed slice of earnings. High gearing (HG) will magnify the effect on earnings and hasten the process of insolvency (Brealey & Myers, 1991). Poor financial performance and failure therefore maybe the result of inappropriate gearing level. Gearing level therefore was the problem. This study sought to do the following:

1) Assess the capital structure of public and the private sector firms in Kenya’s coastal counties.
2) Assess the capital structure gearing levels of public and private sector firms in Kenya’s coastal counties.
3) Determine the effect of the capital structure gearing levels on financial performance of public and private sector firms in Kenya’s coastal counties.

This involved a target population of 500 productive firms in Kenya’s Coastal Counties. Using the Cochran’s sample size formula, 50% proportion of the productive public and private sector firms randomly selected, the
sample was 139 firms. They were observed for a period of 2003 to 2015. Questionnaires and structured interviews were used as instruments for collecting primary data from finance officers or finance managers or their equivalent of the firms. Secondary data was obtained from financial statements (income statement and the balance sheet). Control variables were; size, tangibility and growth. The basic framework for regression was of the form below;

\[ Y = f (\text{gearing levels} + \text{tangibility} + \text{size} + \text{growth}) \]

Where, \( Y = \text{return on assets/return on equity} \)

\[ \text{ROA/ROE}=f (\text{gearing levels} + \text{tangibility} + \text{size} + \text{growth}) \]

Data analysis was done using both descriptive statistics and inferential statistics (regression).

**Keywords:** capital structure, firms, public finance, private finance, public sector, private sector, gearing, poor financial performance etc.

1. **Introduction**

This section contains background to the study, statement of the problem, objectives, hypothesis, justification, assumptions, scope and limitations of the study.

1.1 **Background to the Study**

Soon after Kenya’s independence in 1963, many firms both public and private were set up not only to produce goods and services but also empower the people. By 1990 however, most of these firms were either collapsed and liquidated or were ailing. Few were performing fairly. Many more were set up after 1990. Since then many more had collapsed and liquidated or were technically insolvent. Those which were still in existence had poor financial performance as indicated by GPM, NPM, ROE, ROA, EPS etc. What is a firm?

In the context of this study, firms are agencies of production. They are the producers and suppliers of goods and services consumed by the society. They include public sector firms or public sector undertakings and private sector firms. They are creation of the law. Their activities of production involve transactions such as procurement and payments, disposals (sales) and receipts etc. Ultimately their transactions therefore their activities must translate to movement of cash (finance). Finance therefore is the heart and life blood of firms, transactions and activities of firms (Solomon Ezra, 1969).

To produce and supply goods and services, firms had to employ capital. Capital employed by these firms is described as capital structure; the constitution of the capital employed. If the capital structure did not incorporate external finance, it was ungeared. If however the capital structure incorporated external finance, it was geared. An ungeared capital structure was a total of: share capital from ordinary shareholders and reserves: (a) revenue reserves (b) capital reserves. A geared capital structure was a total of: share capital from ordinary shareholders, reserves, share capital from preference shareholders and long term liabilities (debentures and/or short term liabilities) Weston and Brigham (1979) and Van Horne and Wachowicz (1995).

The proportion of external finance used in financing a firm is referred to as gearing. It may be derived from the ratio of capital with fixed returns (CWFR)-preference share capital and long term liabilities to the ratio of capital with varied return (CWVR)-share capital from ordinary shares or CWFR capital employed (CE) or CWFR as a % of capital employed. The gearing level vary between >0 and 100%. Some firms however have >0 and <30% LG, 30%-≤60% (MG) above 60% (HG).

Firms operate in uncertain environment (Markovitz, 1959). For this reason, firms may experience fluctuations in earnings. These fluctuations are occasioned by systematic (market) risk and unsystematic (random) risk. External finance in the form of debt in a capital structure carries a fixed slice of profits whether they are earned or not. Debt finance also carries with it a legal obligation that demands interest and principal must be paid. Persistent failure to meet these payments may lead to bankruptcy and to pay bankruptcy costs which may be in the form of direct bankruptcy costs. Alternatively, firms may avoid bankruptcy and instead incur indirect bankruptcy cost. Both of which are financial distress costs. In a dynamic environment firms are likely to experience fluctuations in earnings. A firm with high gearing could experience more violent fluctuations in earnings to its shareholders more than disproportionately (Pandey, 2011). A medium geared firm will experience fluctuations in earnings to its shareholders and threaten solvency but the fluctuation will be to a lesser extent. A low geared firm will experience fluctuations in earnings and threaten solvency but would be fairly safe. An ungeared firm will experience fluctuations in earnings but solvency will not be threatened. The firm will be safe.

High gearing therefore will magnify the variability of earnings and may threaten solvency of the firms as earnings may not be sufficient to cover all operations and payment of principles and interest to debt holders’. If
that happened, the firm was insolvent. The value of its assets were equal to value of its debts. The equity value would be zero. Ownership of the firm would be turned over to debt providers who in turn could sell its assets to recover what they were owed in a process called liquidation.

Table 1 below is an extract of the financial performance of some public firms while table 1.2 below is an extract of the level of debt held by some public firms.

**Table 1. Financial performance of some public firms**

<table>
<thead>
<tr>
<th>NAME OF THE COMPANY</th>
<th>DEFICIT (KSHS)</th>
<th>REVENUES (KSHS)</th>
<th>OPERATING EXPENSES (KSHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyatta National Hospital</td>
<td>718m</td>
<td>4.85bn</td>
<td>12.39bn</td>
</tr>
<tr>
<td>Kenya Civil Aviation</td>
<td>113m</td>
<td>5.56bn</td>
<td></td>
</tr>
<tr>
<td>Kenya Broadcasting Corporation</td>
<td>582.3m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenya Wildlife Services</td>
<td>486.7m</td>
<td>3.046bn</td>
<td></td>
</tr>
<tr>
<td>Kenya Film Classification Board</td>
<td>62m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postal Corporation of Kenya</td>
<td>1.58bn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Oil Corporation of Kenya</td>
<td>395m</td>
<td>24.7bn</td>
<td>22.95bn*</td>
</tr>
<tr>
<td>East African Portland Cement</td>
<td>1.58bn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenya Safari Lodges and Hotel</td>
<td>84m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Environmental Management Authority</td>
<td>401.9m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Museums of Kenya</td>
<td>10m</td>
<td>398m</td>
<td>1.16bn</td>
</tr>
<tr>
<td>Mt Elgon Lodge</td>
<td>1.6m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kabarnet Hotel</td>
<td>5.7m</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: public financial report of state corporations 2015

*cost of sales only.

**Table 2. Debt level in capital structure of some public firms**

<table>
<thead>
<tr>
<th>NAME OF THE COMPANY</th>
<th>AMOUNT/SIZE OF DEBT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uchumi</td>
<td>2.5bn</td>
</tr>
<tr>
<td>Kenya Meat Commission</td>
<td>940m</td>
</tr>
<tr>
<td>National Water Conservation</td>
<td>2.4bn</td>
</tr>
<tr>
<td>South Nyanza Sugar</td>
<td>199m</td>
</tr>
<tr>
<td>Nzoia Sugar</td>
<td>168m</td>
</tr>
<tr>
<td>Miwani Sugar Mills</td>
<td>78m</td>
</tr>
<tr>
<td>Miwani Sugar Company</td>
<td>16m</td>
</tr>
<tr>
<td>Kenya Industrial Estate</td>
<td>423m</td>
</tr>
<tr>
<td>Coffee Board of Kenya</td>
<td>752m</td>
</tr>
<tr>
<td>Water Resources Management Authority</td>
<td>362m</td>
</tr>
<tr>
<td>Pyrethrum Processing/Pyrethrum Board of Kenya</td>
<td>863m</td>
</tr>
</tbody>
</table>

Source: public financial report of state corporations 2015

**1.2 Statement of the Problem**

Some of the public firms which were set up in Kenya’s coastal counties included Kilifi Cashewnuts, Bura Irrigation Scheme, Kenya Bixa, Brollo Kenya, Mariakani Milk Scheme, Kenya Meat Commission (KMC), Kenya Safari Lodges and Hotels, Uchumi Supermarkets, National Water Conservation, National Museums of Kenya, Horticultural Crop Development Authority (HCDA). National Oil Corporation of Kenya (NOCK), Kenya Industrial Estate (KIE), Agricultural Finance Corporation (AFC) amongst others. Private sector firms which were formed included the Alliance Group of Companies, Ramisi Sugar, Kenya Bus Mombasa Ltd, Seifees Bakery, Daramsh Bus Company, Malindi Bus Company, Tana River Bus Company, TSS Bus, Coast Bus Ltd etc. Most of these firms had collapsed and liquidated.

Public firms which were set up in other parts of Kenya included Kenya Taitex Mills, Cotton Ginnery of Kenya, East Africa Fine Spinners, Sera coating, Kenya Engineering Industry, KENATCO, Rivertex, KNTC, Kicom, Mountex, Nyayo Bus Corporation, Kenya Railways, and Postal Corporations. Agricultural Development Corporations (ADC), KMC, Industrial and Commercial Development Corporation (ICDC), Kenya Industrial Estate (KIE), National Oil Corporation of Kenya (NOCK), Kenya Film Classification Board, East African Portland Cement, Kenya Broadcasting Corporation, Kenyatta National Hospital, Kenya civil Authority, South
Nyanza Sugar, Nzoia Sugar, Pyrethrum Board of Kenya, National Environmental Management Authority, Coffee Board of Kenya, etc. Private sector firms which were set up included Kenya Bus Nairobi Ltd, Akamba Bus Company, Eveready Kenya, Colgate Palmolive, Cadburys, Proctor and Gamble Kenya, Mumias Sugar, Pan paper Mills etc. Most of these firms were either collapsed and liquidated, were ailing or had relocated.

As at 2015, there were 194 new public firms which were in operations. Out of these, 46.4% had poor financial performance as measured by accounting and market ratios (return on equity and return on assets). About 35 state corporations including sugar firms and local authorities had more operating expenses than revenue. Postal Corporation of Kenya for example made KES2.6m revenues but had KES4.16 b in operating expenses. NOCK made KES22.95b in revenues but had KES 24.76 b in operating expenses. Most public firms recorded more expenses than revenue. Kenya Meat Commission for example had KES940m in debt, Pyrethrum Board of Kenya had KES863m debt, Uchumi had KES2.5b in debt, National Water Conservation had KES2.4 b in debt, and Coffee Board of Kenya had KES752m debt. Out of 194 state corporations, 35 of these collectively owed the government KES15.4 b in non-performing loans (Kenya’s treasury department, statement, 2015).

About 300,000 SME’s were set up in 2010. About 350,000 were set up in 2012. However 2.2 million SME’s had failed in 6 years ending 2015. About 35% of these closed down by the end of their first year in operations (World Bank Report, 2010). The logical questions were; why did these firms perform poorly? And why did these firms fail?

Published annual financial reports, surveys, ad hoc management reports and others attributed poor financial performance and failure of firms to many factors. These included high cost of energy, intense competition, high cost of raw materials, obsolete equipment, poor management, poor technical skills, high cost of finance and other bank charges, inadequate finance, family feuds, lack of succession plan etc. Some empirical studies attributed poor performance and failure of firms to financing; the capital structure. None however attributed this to capital gearing level. This, in the researchers view constituted a research gap to be filled by this study to add to the body of knowledge and literature.

The capital structure which is the constitution of the capital employed has significant effect on earnings and solvency of a firm in risky environment (Brealey & Myers, 1991). In the researchers view, the proportion of external finance which is gearing may vary as follows; 0-30% low gearing (LG), 30%-35% medium gearing (MG1), ≥35%-40% medium gearing (MG2), ≥40%-60% medium gearing (MG3) and >60% high gearing (HG) have effects on financial performance of firms.

The proportion of external finance has fixed cost therefore a fixed slices of earnings. Different gearing levels carry different fixed costs therefore different slices of earnings. High gearing will have more fixed costs and more slices of earnings effectively magnifying the effect on earnings and hasten the process of insolvency.

Therefore, poor financial performance and failure of public and private sector firms in Kenya’s coastal counties was the result of inappropriate gearing level therefore the problem.

1.3 Objectives of the Study
1.3.1 General Objectives

The general objective of this study was to determine the effect of capital structure gearing levels on the financial performance of public and private sector firms in the Kenya’s coastal counties and capital structure gearing levels which had contributed to poor performance and/or failure of firms.

1.3.2 Specific Objective

The specific objective of this study were:

1) To assess the capital structures of public and the private sector firms in Kenya’s coastal counties.
2) To assess the capital structure gearing levels of public and private sector firms in Kenya’s coastal counties.
3) To determine the effect of the capital structure gearing levels on financial performance of public and private sector firms in Kenya’s coastal counties.

1.4 Hypothesis

This study was premised on five following hypothesis;

H1; Low capital structure gearing level (LG>0-<30%) had no significant effect on the financial performance of public and private sector firms.

H2; Medium capital structure gearing (MG1 30%-<35%) had no significant effect on the financial performance.
of public and private sector firms.
H3; Medium capital structure gearing (MG2 ≥35%-≤40%) had no significant effect on the financial performance of public and private sector firms.
H4; Medium capital structure gearing (MG3 ≥40%-≤60%) had no significant effect on the financial performance of public and private sector firms.
H5; High capital structure gearing (HG >60 %) had no significant effect on the financial performance of public and private sector firms.

1.5 Justification of the Study
The empirical studies and other studies which had been undertaken focused on the determination of the influence of debt on financial performance of listed firms. The effects of the level of capital structure gearing of listed and unlisted firms and the effect of the level of gearing; low, medium or high on financial performance of listed and the unlisted firms were not considered.

Further, the studies which were conducted emphasized on firms which were listed at stock exchanges. The emphasis therefore was good performing firms as only good performing firms were listed at the stock exchange. The unlisted firms which may be poor performing firms were not included.

This study focused on areas and firms which were excluded to add to the body of knowledge and literature and to help productive firms in the Kenya’s coastal counties to improve their financial performance. As a consequence, the region and its population would have higher productive capacity, production, income, employment and a higher scale of living and lower poverty levels.

1.6 Assumption of the Study
The study was carried out on the assumption:

a. That all the respondents would give accurate responses to the questionnaires and interviews.
b. That financial information preparation was within acceptable standards.
c. That financial information of limited liability firms was accessible to parties with interest.

1.7 Significance of the Study
The study aimed to benefit various groups of interest which included the owners of firms, employees, bankers, government, capital market authority, stock exchange, lenders, investors, consumers, managers etc.

1.8 Scope of the Study
The scope of this study was limited to the capital structures of 139 registered limited liability public and private sector firms in Kenya’s Coastal Counties.

Figure 1. Map showing the location of Kenyan Coast
1.9 Limitations of the Study

From the study, financial performance is a function of many factors some of which were not investigated in this study. For example the effect of gearing levels on financial performance of firms by sectors. This study was only limited to the general and specific objectives namely; assess capital structure, assess capital structure gearing levels and determine the effect of capital structure gearing levels on financial performance of firms in Kenya’s Coastal Counties.

Further financial performance analysis require a review of conforming firm’s financial data. While public and listed firms have financial data which tend to conform to accepted nationally and internationally accounting standards and conventions, this may not be so for financial data presented by a big percentage of unlisted private limited firms.

Most of unlisted private limited firms in the coastal counties were family owned. Although private firm’s managers did not explicitly state that creative accounting was practiced, there was this possibility. Such financial information may not be accurate and could lead to wrong conclusion as such financial data when used in deriving ratios may produce inaccurate results.

2. Literature Review

The chapter covered literature on capital structure of firms and influence on the financial performance of firms at both international and national level.

2.1 Theoretical Framework

The study covered the following theories: MM theory, trade off theory, agency theory and market timing theory.

2.1.1 MM Theory

Modigliani and Miller (MM) did not agree with the traditional view (Modigliani & Miller, 1958). Under net operating income approach, they averred that in a perfect market where there are homogeneous risk classes, risks, full payment of dividends (100%), no taxes and no transaction cost, and a firms market value and cost of capital remain invariant to capital structure changes.

This they explained in their MM proposition I and MM proposition II. In proposition I, they considered two firms with identical assets, operated in same market segment and had same market share. Since the two firms belonged to the same industry and faced similar competitive and business conditions and exposed to similar business risk, they were expected to have same net operating income.

It is logical to conclude that investors expected rates of return; opportunity cost of capital of the two identical firms would be identical irrespective of whether the firms were all equity financed or one firm was wholly equity financed and one firm had a 50% equity and a 50% debt or other financing combination mix.

MM proposition I is that firms with identical net operating income and business (operating) risks but different capital structure should have the same value. Firms in the same risk class, their total market value is independent of financing mix (debt equity) but by capitalizing the expected net operating income by the capitalization rate (opportunity cost of capital) which is the same for both geared and ungeared firm. Under arbitrage process (switching), investors will engage in personal or homemade gearing against corporate gearing. This would restore equilibrium in the market therefore the market value of the firm would not be affected by gearing. The financing (capital structure) decision in this case was irrelevant. It did not help in creating any wealth for the shareholders neither did it affect the financial performance of the firm.

Financial gearing however affects shareholders return (EPS and ROE). The purpose of gearing is to increase a firms value (Bierman, 1970). Earnings per share and return on equity increases with gearing when the interest rate paid is less than the firms return on assets. Financial gearing also increases shareholders financial risk by amplifying the variability of Earnings per share and return on equity (Solomon & Pringel, 1978). In this case, financial gearing causes two opposing effects; increases the shareholders return and also increases the financial risk. Shareholders will therefore increase the required rate of return (cost of equity) on their investments to compensate for their financial risk. The higher the financial risk therefore, the higher the shareholders required rate of return or cost of equity. This is the MM’s proposition II. For an ungeared firm therefore, its opportunity cost of capital is equal to its cost of equity. The opportunity cost of capital for a geared firm will remain constant as the cost of equity will increase to offset the advantage of cheaper cost of debt so that the opportunity cost of capital does not change (Modigliani & Miller, 1958).

The MM’s theory however is based on a critical assumption that corporate income taxes do not exist. This assertion however is an unrealistic. In reality corporate income taxes exist and interest paid to debt holders is tax
deductible expense. Interest payable by firms therefore saves taxes. This makes debt financing advantageous (Brealey & Myers, 1991). The value of a firm therefore will increase with debt due to the deductibility of interest charges for tax computation. The value of a geared firm therefore will be higher than that of an ungeared firm but earnings to shareholders will be reduced by personal taxes (Modigliani & Miller, 1963).

After the traditional theory and the MM theory, other major theories of capital structure have since emerged; the tradeoff, the pecking order, agency and market timing.

2.1.2 Trade Off Theory

Capital structure is the constitution of the firm’s capital employed. While gearing is the proportion of external finance used in the financing of a firm. (Brealey & Myers, 1991).

From the groups of interest’s point of view, the major issue of interest is gearing. Gearing has significant effects on the earnings and solvency of a firm. The gearing may vary from ‘0’ no gearing, <30% low gearing, ≥30% and ≤60% medium gearing or > 60% high gearing.

From the earnings per share point of view, the best capital structure is one that is high on debt. EPS will be highest with high debt. The best capital structure therefore is one which high on debt at least 100%. The advantage is that earnings per share is high, possibly dividends will be high and the control of the firm shall not be affected and debt is a cheaper form of finance in that interest on debt is tax deductible (MM, 1963).

In practice however, firms do not borrow 100%. Personal tax on interest income reduces the attractiveness of debt (Miller, 1991).

There are other corresponding disadvantages of debt. These are classified as financial distress (Brealey & Myers, 1991). Financial distress arise when a firm is not able to meet its obligations (payment of interest and principal) to debt holders. The firm’s continuous failure to make the payments to debt holders can ultimately lead to the insolvency of the firm.

Firms operate in uncertain environment (Markovitz, 1959). They are faced with systematic (market) risk originating from changing conditions of the general economy and unsystematic (random) risk originating from changing conditions of the firm itself. The expected earnings may not turn out as expected. For a given level of operating risk, financial distress is magnified with higher debt. With higher business risk, the probability of financial distress becomes much higher.

The degree of business risk of a firm depends on the degree of operating leverage; proportion of fixed costs, general economic conditions, demand and price variations, intensity of competition, extent of diversification and maturity of the industry. There will be higher operating risks for firms operating in turbulent business environment and in highly competitive markets and even higher operating risks for firms that are highly capital intensive and have high proportion of fixed costs. Depressed earnings and insolvency of these firms therefore will be higher.

Persistent financial distress may ultimately force a company into liquidation and to pay direct costs of insolvency; legal and administration costs involved in transfer of ownership to debt providers, and the cost of keeping the firm in operation while accountants, lawyers, bankers, and others haggle over the case in court as transfer is a legal process not an economic process.

Alternatively, because it is expensive to go bankrupt, firms will avoid a bankruptcy filing. They will restructure their firms operations and businesses. They may decide to divest, reduce workforce, etc. These are indirect costs of bankruptcy. There will also be other costs related to actions by employees, managers, customers, suppliers, shareholders and agency costs. The direct and indirect bankruptcy costs; financial distress costs may also be called bankruptcy tax. In considering new finance therefore, a firm will be faced with trade off; to choose debt that saves the firm corporate tax or more debt to the firm and face financial distress and to pay bankruptcy costs or tax. Brealeys and Myers (1991).

2.1.3 Agency Theory

Firms may have wide ownership. Practically it will be impossible to have all owners to locate at one central place to run the operations of the firm. Management of the firm therefore will be effectively in the hands of management. This creates agency relationship. Because of varied interest between managers and shareholders, there will be conflict of interest. This will give rise to agency problems. Managers ought to act in the best interest of the shareholders, however they may not. They will incur an expenditure which does not add value to owners. They will not undertake an investment which they consider as risky investment endangering their job security yet it could be beneficial to the owners. This will give rise to agency costs; direct agency costs; an
expenditure that does not benefit the owners and payments made to auditors who will monitor actions of managers, and indirect costs in form of lost opportunities.

Debt in the capital structure expose a firm to insolvency and lose of job security. With debt therefore, managers are likely to be disciplined thereby reducing agency problems and costs. Interest on debt is tax deductible. It will increase expenses and by extension reduce profits and surplus cash. Effectively this reduces agency costs, Jensen and Meckling (1976) and Suleiman (2013).

2.1.4 Pecking Order Theory

Pecking order theory considers information asymmetry and conflict between managers and investors.

As insiders, managers have asymmetry information (Myers, 1984), about the past, the present and future of their firms than investors. Managers are also aware of various types of finance from which they can choose from; internal finance share capital and (reserves), external finance, internal equity, external equity and long term liabilities (debentures and loans) etc. They are aware that each form of finance has benefits and costs. Some finance carries legal obligation to repay with interest and other charges while other financing have a permanent cost like dividends to be paid but it’s not a legal obligation. Some finance have higher exposure to financial distress and high probability to pay financial distress costs.

In essence, every finance has advantages and disadvantages. Some finances have more advantages than others. Based on these, some finance are more superior to others and can be ranked one on top of the other in a pecking order.

Because of asymmetric information (Myers, 1984), managers will consider new finance for their firms based on their view of their firm’s future prospects. They will always use superior internal finance and issue debt which has high exposure to insolvency therefore risky finance to firms when they are positive about their firm’s future prospects. They will however issue equity which has less exposure to insolvency therefore when they are unsure. Therefore, a firm will raise new finance in a pecking order form (Myers, 1984). The firm will always use the safest finance (internal finance) first, if the finance is not available, they will issue debt in the following order:

1) Issue secured debt first
2) Issue unsecured debt
3) Issue hybrid securities

As a last resort, they will issue shares to raise finance but first they will issue rights issues to raise internal equity or issue rights issue and IPO to raise both internal and external equity.

2.1.5 Market Timing Theory

Market timing theory of Baker and Wurgler (2002) postulates that firms time their equity issues. They will issue new stock when the stock price is perceived to be overvalued (high price) and repurchase their shares when there is undervaluation (low price) (Luigi & Sorin, 2009). As a result, fluctuation in stock prices will affect firms decision on capital structure.

Equity markets indicators therefore are important element of real corporate financial policy on issuing equity. Low leverage firms are those which raised funds when their market valuation were high, based on market-to-book ratio. High leverage firms are those which raised funds when their market valuation were low.

There are however two versions of equity market timing.

The dynamic version of (Myers & Majluf, 1984) which is based on rational managers and investors and the irrational managers and investors of Baker and Wurgler (2002).

In the first version, Managers are expected to issue equity directly after a positive information release. This reduces the asymmetry problem between the firm’s management and stockholders. The decrease in information asymmetry will result to an increase in the stock price (Luigi & Sorin, 2009). This theory indicates that firms create their own timing opportunities to finance their projects. There is adverse selection across firms or across time. This is inversely related to the market-to-book ratio.

The second version is based on irrational investors (or managers) and time varying mispricing (or perception of mispricing). Managers issue equity when they believe its cost is irrationally low and repurchase equity when they believe its cost is irrationally high (Baker & Wurgler, 2002; Luigi & Sorin, 2009). This version does not require that the market actually be efficient and it does not ask managers to successful predict stock returns (Luigi & Sorin, 2009).
2.1.6 Relevance of the Theories to This Study

All the theories explained above were relevant to this study. However the tradeoff and the pecking order theory were most relevant for this study. Capital structure issue is an ongoing process. It evolves in response to needs of firms.

In the normal course of business, firms build internal reserves as a source of finance to finance their operations because it is cheaper than debt and equity. Firms use internal reserves first. Where internal reserves are not available, firms seek external sources of finance to finance their operations. Therefore firms use external sources of finance only when their internal reserves are not available or sufficient. This is where the pecking order theory was relevant.

The external sources of finance could be friends and family, gentlemen in dark glasses, members of the company, partners in the partnership and financial markets and institutions. Irrespective of the source of external finance all external finance had costs and benefits. When choosing new finance, firms are faced with a tradeoff between debt which saves the firm corporate taxes and more debt to the firm to pay bankruptcy costs which amount to bankruptcy tax. This is where the tradeoff theory was relevant.

2.2 Empirical Literature and Methodological Approach

Extensive empirical research had been conducted to establish the relationship between capital structure and performance of a firm in different countries. Kenya however had little contribution in this literature. Capital structure formation behavior in developed countries was different from that of emerging, middle and least developed countries. Kenya a least / middle developed nation had capital structure formation behavior peculiar to her own situation.

A brief overview of the researches showed similarities in focus. Most of them had focused on how or whether capital structure affected performance of firms. Kenya had very little contribution in literature. This constituted a research gap to contribute to body of knowledge and literature.

Nevertheless, studies on relationship between capital structure and firms financial performance had produced varying results. Some researchers produced positive relationship, some produced negative relationship, while others produced mixed or no relationship between capital structure and firms financial performance. Some contributions in the literature on this topic are outlined below:

Hlupeko Dude (2013), a study of the impact of debt financing in the capital structure of small and medium firms (SME’s) in Zimbabwe showed that debt finance had a positive impact on productivity of firms. This study did not consider financial performance of the firms.

Caroline Githire (2015) on her study of effects of capital structure on financial performance of firms listed at NSE in Kenya adopted an explanatory none experimental research and used SPSS and multiple regression analysis model to find that equity and long term debt in capital structure had a positive and significant effect on financial performance while short term debt had negative insignificant effect on financial performance. Her study concluded that equity and short term debt financing enhanced financial performance while short term debt reduced financial performance. Her study was however on effects of capital structure on listed firms.

Mykhailo (2013) in his thesis on the impact of capital structure on firm performance in Ukraine investigated the relationship between capital structure and firm performance. His main hypothesis was that financial leverage positively affected firm activity. Using a sample of 16.5 thousand firms, he found that the relationship between leverage and firm performance was negative. The result was not consisted with the tradeoff theory but supported the validity of the pecking order theory.

Bokhtiar Hassan et al. (2013) studied the influence of capital structure on firms performance on 36 bangladesh firms listed in Dhaka stock exchange. Based on four performance measure and using panel data regression method found that EPS was significant positively related to short term debt while significant negatively related to long term debt concluded that capital structure had negative impact on firms performance which was consisted with the pecking order theory.

Mahfuzah et al. (2012) in his study of capital structure and firm performance on 237 Malaysian listed companies used four performance measures and panel data procedure on five capital structure measures. His results indicated that firm’s performance measured by ROA, ROE and EPS had negative relationship with short term debt, long term debt and total debt as independent variables. There was however a positive relationship between growth and performance in all sectors. He concluded that total debt has significant negative relationship with the performance of the firm.
Harwood (2015) in his study of effects of debt on firm’s performance on commercial banks listed in Nairobi securities exchange sought to find out whether use of debt in affirms debt structure affected firm’s performance. He used longitudinal research designs in collecting data on target population of 11 commercial banks using SPSS version 16.0 and inferential statistics; correlation and regression mode found that debt negatively affected firm’s performance though not statistically significant as measured by return on assets. The concluded that use of debt in firms capital structure negatively affected the performance of commercial banks in Kenya though not statistically significant.

Lawal et al. (2014) in his study of effects of capital structure on firm’s performance on manufacturing companies in Nigeria examined the effect of capital structure on firms performance using descriptive and regression research technique considered performance ratios of return on assets and return on equity and total debt to total assets and total debt to equity on firm’s performance. He found that capital structure, total debt and debt to equity ratio were negatively related to firm performance and recommended that firms use more equity than debt in financing their business activities in as much as the value of the business can be enhanced using debt capital.

Nirajini et al. (2013) in her study of impact of capital structure on financial performance of listed trading companies in Sri Lanka examined the relationship between capital structure and financial performance using correlation and multiple regression analysis found a positive relationship between capital structure and financial performance. He found that capital structure was significantly impacted on the financial performance of the firm and that debt asset ratio, debt equity ratio and long term debt correlated with GPM, NPM, ROCE, ROA and ROE at significant level of 0.05 and 0.1.

Margaritis and Psillaki (2010) observed a significant positive relation between leverage and firms performance. They used a sample of both low and high growth French firms for the period 2003-2005 and found that leverage have positive effect on firms efficiency over the entire sample.

Using panel data consisting of 257 South African firms over the period 1998 to 2009, Samuel (2013) investigated the association between capital structure and firm performance. To test the relationship, he used GMM regression approach and found a positive and significant relation between financial leverage and firm’s performance. Aliakbar, Seyed and Pejman (2013) also found a significant positive link between capital structure and firm performance in the Tehran Stock Exchange.

Allen (2002) in his study of capital structure and performance in US banking industry, used simultaneous equation mode to find how leverage in capital structure affected agency costs therefore firm performance. They found data on US banking industry were consistent and the results was statistically and economically significant. However the US banking industry that the researcher looked at is different from the productive public and private firms in Kenya’s coastal counties.

In contrast, a rigorous study was performed by Rajan (1995) to investigate the capital structure of 48 firms from the U.S during the period 1981-1990. Result of that study revealed that there is a negative relation between profitability and debt-level, and the relationship would be more visible if firm size gets bigger. They also added that if return on stock and investments were fixed in a short term, and the main way of external financing was debt, there was negative correlation between performance and leverage.

Gleason, Lynette, and Ike (2000) concluded that high levels of debt in the capital structure reduced the firm’s performance. They observed that firm’s capital structure had a statistically significant negative effect on firm’s performance matrixes, i.e. return on assets (ROA), Growth in sales (Gsales), and pretax income (Ptax).

Tristan et al. (2015) in his study of capital structure and firms performance in Vietnam examined the impact of capital structure on firms performance in selected 147 firms listed on HCMC stock exchange. He checked the impact of level of leverage on firm’s performance and found it to be negative. He also checked short term and long term debt ratios to see the effect of debt maturity on firm’s performance. He found no difference between short term and long term debt. He however found that there was negative relationship with very high proportion on average with debt.

A negative link between capital structure and firms performance was also witnessed by (Fama & French, 2002). They observed that highly profitable firms with lower risk of financial distress were actually less levered which contradicted with the trade-off theory.

Manawaduge, Zoysa, Chowdhury, and Chandarakumara (2011) concluded that most of the Sri Lankan firms employed short term debt capital as against the long term debt and firm performance was negatively affected by the use of debt. Similar result was also noticed in Nigeria by (Amos & Jeremiah, 2013). In addition, they documented that firms use retained earnings first, then debts and finally equity.
With cross sectional tie series fixed model, (Anup & Suman, 2010) examined the link between capital structure and firm value in Bangladesh. They found that maximizing the wealth of shareholders demands a perfect mixture of debt and equity, whereas cost of capital had a negative correlation in this choice and it had to be as least as possible. Khairul (2013) also witnessed significant negative relation between profitability and leverage in Bangladeshi firms.

However, some authors revealed mixed results. In this line, (Kinsman & Newsman, 1998) studied the relationship between debt level (including three measures of debt level) and firm’s performance and detected diverse results. This study found that earnings are negatively correlated with short-term debt, but are positive with long term debt. A similar result was found by Mesquita and Lara (2003) in Brazil.

Siyambola (2015) in his study on impact of gearing on performance of companies of Nigeria carried out a study to ascertain the roll gearing play in the performance of selected companies in Nigeria. Three research hypothesis were raised and tested. The hypothesis were tested using t-test statistics at a significant level of 5%. The testing of the hypothesis revealed that efficiently managed gearing could lead to increase in earnings of the company. In his finding, gearing had direct relationship with the performance of the company and that gearing provided some advantages with positive impact on profitability.

Nor and Fatihah (2012) tried to explore the impact of debt and equity financing on the performance of the firms listed in Bursa Malaysia. Using a sample of 130 firms for the period 2001-2010 combined with multiple regression analysis, they cited a statistical significant negative relation between capital structure and firms performance.

Roden and Lewellen (1995) employed a sample of 48 U.S firms during 1981-1990 and found a positive relation between profitability and capital structure. Analogous results were also observed by champion (1999), Ghosh, Nag, and Sirmans (2000), Hadlock and James (2002). They all concluded that highly profitable firms used high-level of debts.

Using a sample of 237 Malaysian companies during 1995-2011, (Salim & Yadev, 2012) studied the relationship between capital structure and firm performance. Their analysis revealed that firm performance measured by ROA, ROE and EPS had negative relationship with the capital structure while Tobin’s Q has significantly positive relationship with STD and LTD. Similar result was observed by (Zeitun & Tian, 2007) in their study for a sample of 167 Jordanian companies during 1989-2003.

Abor (2005) also investigated the link between capital structure and profitability of firms listed in Ghana Stock Exchange for the period 1998-2002. Using regression analysis, he witnessed a significantly positive relation among ROE and the short term debt and total debt ratio, while a negative relation with long term debt.

Conversely, some researchers observed weak to no relation. Phillips and Sipahioğlu (2004) documented no significant link between capital structure and firms performance for publicly traded UK lodging firms; lodging firms seem to prefer external sources as capital return was at a low level.

Tianyu (2013) examined the influence of capital structure on firm’s performance in both developed and developing markets. A sample of 1200 listed firms in Germany and Sweden and 1000 listed firms in China for the period 2003-2012 had been used in his study. Applying OLS regression method, he documented that capital structure had a significant negative effect on firm’s performance in China. Whereas, significant positive effect in two European Countries, i.e. Germany and Sweden, before financial crisis in 2008.

Ali and Iman (2011) observed that firm’s performance, calculated by EPS and Tobin’s Q was positively related with the capital structure, while they got a negative relation between capital structure and ROA. However, they witnessed no significant relationship between ROE and capital structure. Same result was also found by Ebrati, Farzad, Reza, and Ghorban (2013).

Ibrahim (2009) also examined the influence of capital structure choice on firm performance in Egypt. His study based on a sample of non-financial listed firms for the period 1997 to 2005 and used multiple regression analysis. Results suggested that firm performance had weak to no relationship with capital structure choice. Likewise, (Khalaf, 2013) also found negative and insignificant relationship between short term and long term debt ratio and ROA and profit margin.

The empirical studies mentioned focused on effects on capital structure; short term and long term debt on performance of listed firms. They used descriptive statistics and inferential statistics approaches. This study focused on effects of gearing levels (debt levels) on financial performance of firms both listed and not listed firms.
The focus of this study though slightly different had similar theme and also used a combination of descriptive and inferential statistics.

2.3 Gaps and Brief Critique

Empirical studies undertaken examined the influence of debt in the capital structure on financial performance of firms which were listed at the stock exchanges. This was a focus on good performing firms as only good performing firms are listed at the stock exchange. It excluded the poor performing and unlisted firms. This constituted a research gap.

No empirical studies had focused on the effect of the level of gearing: low, medium or high on financial performance. This also constituted a research gap. This study intended to determine the effects of gearing levels on financial performance of both listed and unlisted and good performing and poor performing firms to fill the research gaps to add to the body of knowledge and literature.

2.4 Conceptual Framework

This study had not been done before, therefore it was an original theory developed and propounded by the researcher. The conceptual framework was as illustrated below.

![Conceptual framework](image)

**Figure 2. Conceptual framework**

*Note. LG: low gearing (0-30%); MG1: medium gearing one (30-35%); MG2: medium gearing two (≥35%-<40%); MG3: medium gearing three (≥40%-<60%); HG: high gearing (>60%); ROA: return on assets; ROE: return on equity.*

Source: Authors own formulation.

Firms operate under risky environment. In this environment there is systematic risk originating from changing economic conditions and unsystematic risk originating from changing conditions of the firms themselves. To survive and prosper under this risky condition the firms must forecast/plan. This plan include long range planning and capital expenditure planning. The two are expressed in numerical (financial) terms in budgetary planning as a budget; an action plan. These were the intervening variables.

The action plan was turned into action (implementation) through transactions; procurement and payments, disposals (sales) and receipts. Ultimately, transactions translated to movement of cash (finance). Therefore, the action plan had to be financed when turning it into action. This was the financing/capital structure decision. The financing could be of lower gearing (LG), medium gearing (MG1), medium gearing (MG2), medium gearing (MG3) or high gearing (HG). These were the independent variables. The outcome of the action plan after implementation was the financial performance which was measured by return on equity and return on assets. These were the dependent variables.

2.5 Summary

This study focused on effects of levels of gearing on financial performance of the firms. This study sought to test the hypothesis that gearing levels; LG, MG1, MG2, MG3 and HG had no effect on the financial performance of the firm.

The study therefore was to determine the effects of capital structure gearing levels on financial performance of public and private (good and poor performing firms). Emphasis was on the level of gearing and financial performance of public and private firms in Kenya’s coastal counties.
3. Research Methodology

This chapter presents data and methodology used in the study. It includes the design, target population, sample design, data collection, instruments/tools, data collection procedures and techniques.

3.1 Research Designs

The study adopted both descriptive survey and inferential statistics.

3.2 Study Sites

The study was carried out on the capital structures gearing levels of public and private sector firms in Kenya’s coastal counties; Mombasa, Kwale, Kilifi, Tana River, Lamu, and Taita Taveta.

![Figure 3. Study sites](source: Coastal Kenya Atlas Map)

3.3 Target Population

The target population was 500 productive limited, listed and unlisted public and private sector firms. The list of firms was available at the government desk in the Huduma Centre and state Department of trade and industry Kenya.

3.4 Sample Size

From the target population of 500 productive public and private sector firms in the Kenya’s coastal counties, Cochran’s size formula with confidence level of 95% and a margin of error of 5%, a proportion or distribution was 50%, the sample size was 139 firms selected from computer generated random sample.

Cochran’s size (Bartlett et al., 2001) formulae, 
\[ N_0 = \frac{z^2pq}{e^2} \]
where e is the desired level of precision, (margin of error (5%)), p is the estimated proportion of the population which has the attribute in question (50%), q is 1-p and z value is found in z table where a 95% confidence level gives us z values of 1.96. A 95% confidence level was used because it provided a range of values which was likely to contain the population parameter of interest.

The sample size of 139 productive public and private sector firms was observed over a period of 2003 to 2015.

3.5 Sampling Technique and Proportion

The sample of 139 firms involved in producing goods or services was randomly selected from a frame of 500 registered, limited, listed or unlisted private and public firms. They were in 73 sectors in Kenya’s coastal counties. The generation of the sample firms was proportionate and was by the use of computer generated random sample. This was to ensure there was a representative sample of firms. Mombasa County being the main host of both public and private sector firms within the coast county regions had about 75% therefore contributed 75% of the sample firms, followed by Kilifi County accounting for 12%, followed by Taita Taveta County accounting for 6%, Kwale County accounting for 3% and the balance of 4% is shared equally by Tana River and Lamu County.
3.6 Data Collection Instruments

Primary and secondary data was used in this study. The primary data was obtained using a self-administered structured questionnaire. Secondary data was obtained from financial statements.

3.7 Validity and Reliability of Instruments

To ensure validity of the study, the instrument used for data collection was subjected to a pilot test run survey conducted to test the effectiveness of this research instrument on a randomly selected survey participants.

The initial questionnaire had name slots for firm’s details. Respondents (finance managers of most firms) however they were reluctant to give financial information alongside firms details citing sensitivity and confidentiality of the information sought. It was agreed that firms details and names of respondents would not be quoted anywhere in the report. Therefore the questionnaire had to be revised to expunge these sections.

3.8 Data Collection Procedure

The researcher and data collection assistants administered the questionnaires to the respondents using two methods; drop and pick letter and direct interview on appointment. The selected firms were visited and the questionnaires administered to the respondents. The respondents were assured that strict confidentiality would be maintained in dealing with the responses.

3.9 Data Analysis and Presentation

The data was analyzed using the descriptive statistics and inferential statistics (regression analysis).

Objective one which sought to assess the capital structure of public and the private sector firms in Kenya’s coastal counties used descriptive statistics to analyze data.

Objective two which sought to assess the capital structure gearing levels of public and private sector firms in Kenya’s coastal counties used descriptive statistics to analyze data.

Objective three which sought to determine the effect of the level of capital structure gearing on financial performance of public and private sector firms in Kenya’s coastal counties used both descriptive and inferential statistics (regression analysis) to analyze data.

In order to test the hypothesis concerning the impact of gearing levels (independent variables) on financial performance (dependent variables), five models for ROE and five models for ROA were developed. Microsoft excel was used to perform the statistical calculations required for this study.

The general model was formulated as follows:

\[ Y = f(\text{gearing levels} + \text{tangibility} + \text{size} + \text{growth}) \]

Where, \( Y \) = return on assets/return on equity

\[ \text{ROA/ROE} = f(\text{gearing levels} + \text{tangibility} + \text{size} + \text{growth}) \]

Table 3. Description and measurement of variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>description</th>
<th>measurement</th>
<th>Expected results</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>Return on equity</td>
<td>Ratio of Net income(KES)/total equity(KES)</td>
<td>+</td>
</tr>
<tr>
<td>ROA</td>
<td>Return on Assets</td>
<td>Ratio of Net profit(KES)/total assets(KES)</td>
<td>+</td>
</tr>
<tr>
<td>Gearing Levels</td>
<td>Gearing levels</td>
<td>CWFR as a % of C.E</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L.G = 0-30%</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MG1 = 30%-35%</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MG2 = ≥35% -40%</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MG3 = ≥40% ≤50%</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HG = ≥60%</td>
<td>-</td>
</tr>
<tr>
<td>Tangibility</td>
<td>tangibility</td>
<td>Ratio of F.A(KES) to T.A(KES)</td>
<td>+</td>
</tr>
<tr>
<td>Size</td>
<td>Size of the firm</td>
<td>total assets(KES)</td>
<td>+</td>
</tr>
<tr>
<td>Growth</td>
<td>Growth of the firm</td>
<td>Change in net sales(KES)</td>
<td>+</td>
</tr>
</tbody>
</table>

Gearing is the proportion of external finance used in financing the operations of the firm. This gearing may be calculated as follows:

1) Ratio of capital with fixed returns (CWFR) (preference share capital and long term liabilities) to the ratio of capital with variable return (CWVR) (share capital from ordinary shares). OR
2) CWFR: Capital employed (CE) OR
3) CWFR as a % of capital employed.

This study used the third method in deriving the gearing levels of the firms. With external finance in form of debt comes tax deductibility. This was an added advantage of debt finance in form of savings in corporate taxes. Earnings were expected to be high possibly dividends would be high. External finance however had costs. At some point of gearing level, the benefits of debt finance would be more than the cost of debt finance. Beyond this point which may be referred to as optimum level, the cost of debt finance may be more than the benefit of debt finance. Earnings at that point would decline because the cost of capital (WACC) and the cost associated with risks of debt financing would be higher than the benefit of debt. Financial distress cost which include direct costs to bankruptcy and indirect bankruptcy costs (the costs of avoiding bankruptcy) could be more than the benefit of debt financing. This may affect the financial performance of firms and could lead to failure of firms.

Tangibility was expected to be positive. The more fixed assets a firm had, the higher would be the production which in turn resulted in more sales and increase in earnings if demand was high.

The size of the firm was expected to be positive. The bigger the size of the firm, the higher were the expected earnings and better performance of firms.

Overall growth of the firm was expected to be positive with an increase in sales resulting to an increase in earnings.

There are different measures for financial performance of firms. The measures include the accounting and market ratios. These are derived from the firm’s financial statements (Majumdar & Chlubber, 1999; Abor, 2005; Ebaid, 2009; Saed & Mahmoodi, 2009).

This study used two common accounting ratios to evaluate the firm’s financial performance; return on equity and return on assets. These were the dependent variables of the study. Financial Information for these variables was obtained from secondary data observed from the financial statement (the income statement and the balance sheet) for each firm from 2003 unto 2016.

The dependent variables measure of financial performance included:
1) ROE derived as net income divide by total equity.
2) ROA derived as net profit after tax divide by total assets.

Some other variables tend to influence a firms financial performance. (Ramaswammy, 2001; (Frank & Goyal, 2003; Jermias, 2008; Ebaid, 2009), these included size, growth and tangibility. These were treated as control variables.

1) Size was derived from the log of sales. It may also be natural logarithm of net assets.
2) Growth was derived as change in net sales. It may also be derived as change in total assets.
3) Tangibility was derived as ratio of fixed assets to total assets. (FATA)

From the empirical model, the impact of capital structure gearing levels on financial performance in the 139 sampled firms was specified. Five models for ROE and five for ROA were used to test hypothesis as follows;

\[ \text{ROE} = f (\text{LG} \text{+ tangibility} \text{+ size} \text{+ growth}) \]
\[ \text{ROE} = f (\text{MG}_1 \text{+ tangibility} \text{+ size} \text{+ growth}) \]
\[ \text{ROE} = f (\text{MG}_2 \text{+ tangibility} \text{+ size} \text{+ growth}) \]
\[ \text{ROE} = f (\text{MG}_3 \text{+ tangibility} \text{+ size} \text{+ growth}) \]
\[ \text{ROE} = f (\text{HG} \text{+ tangibility} \text{+ size} \text{+ growth}) \]

\[ \text{ROA} = f (\text{LG} \text{+ tangibility} \text{+ size} \text{+ growth}) \]
\[ \text{ROA} = f (\text{MG}_1 \text{+ tangibility} \text{+ size} \text{+ growth}) \]
\[ \text{ROA} = f (\text{MG}_2 \text{+ tangibility} \text{+ size} \text{+ growth}) \]
\[ \text{ROA} = f (\text{MG}_3 \text{+ tangibility} \text{+ size} \text{+ growth}) \]
\[ \text{ROA} = f (\text{HG} \text{+ tangibility} \text{+ size} \text{+ growth}) \]

4. Results and Discussion

In this chapter, results are presented and discussed. Section 4.1 presents descriptive analysis of sampled firms,
section 4.2 presents the test of hypothesis and section 4.3 presents the empirical results.

4.1 Sampled Firms: A Descriptive Analysis

4.1.1 Capital Structure of Sampled Firms

Objective one of the study sought to assess the capital structures of public and private firms in the Kenya’s Coastal Counties. Table 4 below presents the actual capital structure of the sampled firms while Table 5 presents the actual capital structure forms.

Table 4. General capital structures forms of firms in the sample

<table>
<thead>
<tr>
<th>Capital Structures Forms</th>
<th>No of firms</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share capital.</td>
<td>6</td>
<td>4.3</td>
</tr>
<tr>
<td>Reserves -revenues and capital</td>
<td>133</td>
<td>95.7</td>
</tr>
<tr>
<td>Share capital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reserves –revenues and capital Liabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Preference share capital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Long term loan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Short term loans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>139</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field Survey, August 2018.

As the table above shows, all firms in the sample had capital structures of various forms. It was generally observed that 95.7% of firms used a capital structure composed of internal and external finance while only about 4.3% of firms used a capital structure composed of internal finance only.

Table 5. Actual capital structure forms of sampled firms

<table>
<thead>
<tr>
<th>Capital Structures Forms</th>
<th>No of firms’ Population (%)</th>
<th>state of firm</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPITAL STRUCTURE I</td>
<td>6</td>
<td>4.3 Unlisted at SE, mixed, medium and large mature. Some are public.</td>
</tr>
<tr>
<td>1. Share capital from ordinary shares.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Reserves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAPITAL STRUCTURE II</td>
<td>2</td>
<td>1.4 Listed at SE, mature and large.</td>
</tr>
<tr>
<td>1. Share capital from ordinary shareholders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Revenue reserves.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Preference share capital (Non-Controlling Interest)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Long term loan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Short term loan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAPITAL STRUCTURE III</td>
<td>14</td>
<td>10.1 Mixed, listed and unlisted at SE mature large and some are public.</td>
</tr>
<tr>
<td>1. Share capital from ordinary shareholders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Reserves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Long term loan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Short term loan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAPITAL STRUCTURE IV</td>
<td>10</td>
<td>7.2 Mixed, listed and unlisted at SE, mature large and some are public.</td>
</tr>
<tr>
<td>1. Share capital from ordinary shareholders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Reserves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Long term loans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAPITAL STRUCTURE V</td>
<td>107</td>
<td>77 Unlisted at SE, all private, mixed mature large and medium.</td>
</tr>
<tr>
<td>1. Share capital from ordinary Shareholders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Reserves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Short term loan</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Field Survey, August 2018.

Further, about 1.4% of firms in the sample used capital structure composed of internal finance and three options of external finance; preference share capital, long term loans and short term loans, 10.1% of the firms in the sample used capital structure composed of internal finance and two options of external finance; long term loans and short term loans, 7.2% of the firms in the sample used capital structure composed of internal finance and one option of external finance; long term loans while 77% of the firms in the sample used capital structure composed of internal finance and one option of external finance; short term loans. Majority of firms in Kenya’s coastal counties (77% of the firms in the sample) therefore used capital structure whose external finance had only one option; short term finance.
4.1.2 Capital Structure Gearing Levels

Objectives two of this study sought to assess the capital structure gearing levels of public and private firms in Kenya’s Coastal Counties. Table 6 is an Extract which shows the various gearing levels and the proportion of firms in the sample which have those gearing levels.

Table 6. Gearing levels of sampled firms, 2018

<table>
<thead>
<tr>
<th>Gearing level</th>
<th>No. of firms</th>
<th>% of firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 levels</td>
<td>6</td>
<td>4.3</td>
</tr>
<tr>
<td>&gt;0 - &lt; 30% LG</td>
<td>53</td>
<td>38.13</td>
</tr>
<tr>
<td>30% - &lt; 35% MG1</td>
<td>18</td>
<td>12.95</td>
</tr>
<tr>
<td>≥35% - &lt; 40% MG2</td>
<td>15</td>
<td>10.8</td>
</tr>
<tr>
<td>≥40% - ≤60% MG3</td>
<td>30</td>
<td>21.6</td>
</tr>
<tr>
<td>&gt;60% %HG</td>
<td>17</td>
<td>12.2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>139</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Survey, August 2018.

The results shows that about 4.3% of the sampled firms did not gear their capital structure, these firms relied on internal resources. About 95.7% of the firms geared their capital structure. Out of these, 38.13% had low gearing, 12.95% had medium gearing one, 10.6% had medium gearing two, and 21.6% had medium gearing three while 12.2% had high gearing.

The gearing levels moved up and down in opposite direction with increases in reserve. Actual gearing moved up in tandem with needs of the firm and financing operations.

As the study shows, firms relied heavily on reserves, however between medium gearing one and high gearing, there was a population of 57.55% of firms. The single most popular gearing level was low gearing with a population of 38.13%. This low gearing does not appear to be by design but rather it is because firms with this gearing levels are mature and are able to generate sufficient internal reserves which they use to finance their operations. This was followed by medium gearing three with a population of 21.6%, medium gearing one with a population of 12.95%, high gearing with a population of 12.2% and lastly medium gearing two with a population of 10.8% in that order.

The growth pattern of gearing level showed that gearing was an ongoing process. It evolved in response to needs of the firm. It moved up to meet the needs of the firm. Internal reserves however suppressed the upward movement though with no consistency.

4.1.3 Effects of Gearing Levels on Financial Performance

The third objectives of this study was to determine the effect of gearing levels on financial performance as measured by return on equity and return on assets. Table 7 shows the general statistics of the sample while Table 8 shows the gearing level of firms, the proportion of firms with that gearing level and the financial performance at each gearing level.

Table 7. General descriptive statistics of the sampled firms

<table>
<thead>
<tr>
<th>Variable</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean/Average</th>
<th>No. of firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>-1.35%</td>
<td>51.5%</td>
<td>22.9%</td>
<td>139</td>
</tr>
<tr>
<td>ROA</td>
<td>-46%</td>
<td>40.4%</td>
<td>12.3%</td>
<td>139</td>
</tr>
<tr>
<td>&gt;0 - &lt;30% (LG)</td>
<td>6%</td>
<td>28.5%</td>
<td>18.7%</td>
<td>139</td>
</tr>
<tr>
<td>≥30% - &lt;35% (MG1)</td>
<td>30%</td>
<td>34.4%</td>
<td>32.0%</td>
<td>139</td>
</tr>
<tr>
<td>≥35% - &lt;40% (MG2)</td>
<td>35%</td>
<td>39.1%</td>
<td>37.1%</td>
<td>139</td>
</tr>
<tr>
<td>≥40% - ≤60% (MG3)</td>
<td>41.4%</td>
<td>60%</td>
<td>53%</td>
<td>139</td>
</tr>
<tr>
<td>&gt;60% (HG)</td>
<td>63.2%</td>
<td>165%</td>
<td>81.3%</td>
<td>139</td>
</tr>
<tr>
<td>Size</td>
<td>4.27%</td>
<td>7.96%</td>
<td>5.89%</td>
<td>139</td>
</tr>
<tr>
<td>Tangibility</td>
<td>27.1%</td>
<td>75%</td>
<td>66%</td>
<td>139</td>
</tr>
<tr>
<td>Growth</td>
<td>-15%</td>
<td>16%</td>
<td>4%</td>
<td>139</td>
</tr>
</tbody>
</table>

Source: Field Survey, August 2018.

It is observed that the average return on equity of the sample of firms was 22.9%, the lowest return on equity was
-1.35% while the highest return on equity was 51.5%. On the other hand, the average return on assets was 12.3%, the lowest return on assets was -46% while the highest return on assets was 40.4%.

At low gearing range, firms used reserves to finance their operations. This reduced gearing levels. The average gearing level was 18.7%, the lowest gearing level was 6% while the highest gearing level was 28.5%. At medium gearing one range, the average gearing level was 32.0%, the lowest gearing level was 30% while the highest gearing level was 34.4%. At medium gearing two range, the average gearing level was 37.1%, the lowest gearing level was 35% while the highest gearing level was 39.1%. These gearing levels are considered optimal or normal for well established firms. At medium gearing three range, the average gearing level was 53%, the lowest gearing level 41.4% while the highest gearing level was 60%. At high gearing range, the average gearing level was 81.3%, the lowest gearing level was 63.2% while the highest gearing level was 165%.

With regard to size, the average size of firms was 5.89, with the lowest size being 4.27 while the highest was 7.96. For tangibility, the average fixed assets to total assets was 66%, the lowest fixed assets to total assets was 75% while for growth, the general average growth was 4%, the lowest was a fall of -15% while the highest was a growth of 16%. Overall appendix 2f shows positive growth for some firms and negative growth for other firms.

Table 8. Gearing levels and financial performance of firms sampled in Kenya’s coastal counties

<table>
<thead>
<tr>
<th>Gearing levels</th>
<th>FIRMS</th>
<th>ROE</th>
<th>ROA</th>
<th>SIZE</th>
<th>TANGIBILITY</th>
<th>GROWTH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>(%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0%</td>
<td>6</td>
<td>4.32</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>&gt;0 - &lt;30% (LG)</td>
<td>53</td>
<td>38.13</td>
<td>0.9</td>
<td>31.2</td>
<td>14.4</td>
<td>1.0</td>
</tr>
<tr>
<td>30% - &lt;35% (MG1)</td>
<td>18</td>
<td>12.95</td>
<td>19.3</td>
<td>36.0</td>
<td>22.34</td>
<td>12.8</td>
</tr>
<tr>
<td>≥35% - &lt;40% (MG2)</td>
<td>15</td>
<td>10.79</td>
<td>15.6</td>
<td>34.4</td>
<td>25.47</td>
<td>12.3</td>
</tr>
<tr>
<td>≥40% - ≤60% (MG3)</td>
<td>30</td>
<td>21.58</td>
<td>11.2</td>
<td>42.1</td>
<td>28</td>
<td>4.7</td>
</tr>
<tr>
<td>&gt;60% (HG)</td>
<td>17</td>
<td>12.2</td>
<td>-1.35</td>
<td>51.5</td>
<td>31.42</td>
<td>-46</td>
</tr>
<tr>
<td>Total</td>
<td>139</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Field Survey, August 2018.

Table 8 shows gearing levels of firms and financial performance of firms at each gearing levels. Based on these results, 4.32% of the firms are not geared, 38.13% are low geared, 12.95% are at medium gearing one level, 10.79% are at medium gearing two level, 21.58% are at medium gearing three level while 12.2% are at a high gearing level.

At low gearing, average return on equity was 14.4%, the lowest return on equity was 0.9% while the highest return on equity was 31.2%. The average return on assets was 11.27%, the lowest return on assets was 1.0% while the highest was 17.2%. This explains that at this level, firms are considered low risk, this is because the firms are mature and are able to generate sufficient internal reserves which they use to finance their operations.

At medium gearing one, the average return on equity was 22.34%, the lowest return on equity was 19.3% while the highest return on equity was 36%. The average return on assets was 15.29%, the lowest return on assets was 12.8% while the highest return on assets was 19%. The return on equity and return on assets as measured by the firms in this levels shows that these type of firms are well established since this gearing level is typically considered as the optimal level of gearing. The coefficient is highest, the benefits are maximized and the costs are minimum at this range.

At medium gearing two, the average return on equity was 25.47%, the lowest return on equity was 15.6% while the highest return on equity was 34.4%. The average return on assets was 15%, the lowest return on assets was 12.3% while the highest return on assets was 20.4%. The firms’ performance as measured by the return on equity and the return on assets shows that at this gearing level costs have very slightly began to rise as benefits begin to diminish.

At medium gearing three, the average return on equity was 28%, the lowest return on equity was 11.2% while the highest return on equity was 42.1%. The average return on assets was 12.72%, the lowest return on assets was 4.7% while the highest return on assets was 16.3%. The results clearly explains how firms at this gearing level may be at a financial risk because during times of lower profits and higher interest rate, the firms would be more susceptible to loan default and bankruptcy but to a lesser extent compared to the firms that are at a high gearing levels.
At high gearing, the average return on equity was 31.42%, the lowest return on equity was -1.35% which was the extreme negative return on equity while the highest return on equity was 51.5% which was the extreme positive return on equity. The average return on assets was 11.9%, the lowest return on assets was -46% which was the extreme negative return on assets while the highest return on assets was 40.4% which was an extreme positive return on assets. This explains that firms at this level would be at a greater financial risk, this is because these firms may be vulnerable to economic downturn since this gearing level works well during good economic times only. As clearly indicated from the study, at this gearing level, there was an extreme positive return on equity of 51.5% and an extreme negative return on equity of -1.35%. There was also an extreme positive return on assets of 40.4% and an extreme negative return on assets of -46%. Firms reported the lowest return on equity of -1.35% and the lowest return on assets of -46%.

In regard to size, at low gearing, medium gearing one, medium gearing two, medium gearing three and high gearing levels, average size was 6.02%, 5.44%, 5.89%, 5.14%, and 5.69% respectively while the smallest size was 4.27%, 3.45%, 5.0%, 4.8% and 4.15% respectively. The biggest size was 8.45%, 6.47%, 7.51%, 6.59% and 6.29% respectively. From this data, the maximum size of the firm was at low gearing level with 8.45%, this is because firms at this gearing level are able to generate sufficient internal reserves which they use to finance their operations, this was followed by firms in the medium gearing two level, medium gearing three level, followed by medium gearing one and lastly high gearing level.

In regard to tangibility, at low gearing, medium gearing one, medium gearing two, medium gearing three and high gearing the average fixed assets to total assets was 0.75%, 0.64%, 0.55%, 0.46% and 0.74% respectively while the lowest fixed assets to total assets was 0.28%, 0.33%, 0.27%, 0.30% and 0.69% respectively, this explains that low geared firms have a lower ratio of fixed assets to total assets compared to high geared firms. The highest was 0.75% for all, this explains that the firms fixed assets to total assets was 0.75% at all gearing levels.

In regard to growth, at low gearing, medium gearing one, medium gearing two, medium gearing three and high gearing levels, average growth was 0.01%, 0.03%, 0.03%, 0.02% and 0.04% respectively while the lowest growth was 0.15%, 0.08%, 0.04%, 0.11% and 0.40% respectively. The highest growth was 0.08%, 0.16%, and 0.10%, 0.11% and 1.79% respectively, this explains that highly geared firms have the highest opportunity of growth compared to low geared firms.

Both positive and negative growth were observed in firms in the sample. This is suggested by the reason that some firms were operating in growth or stable environment while others were operating in unstable (dynamic) environment. This finding was also reflected in financial performance of firms in the sample where both positive and negative return on equity and return on assets were observed.

There were firms with low gearing and without the benefit of internal reserves, these firms had low investments in fixed assets and therefore were smaller in size. There were other firms with high gearing and without the benefit of internal reserves, these firms had high investments in fixed assets and were bigger in size. There were also firms with low gearing but with the benefit of high internal reserves, they had high investments in fixed assets and were bigger in size. Other firms also had high gearing and with the benefit of high internal reserves, they had high investments in fixed assets and were bigger in size.

In regard to gearing levels and financial performance of firms, the hypothesis were that the gearing levels (low gearing, medium gearing one, medium gearing two, medium gearing three and high gearing) had no effect on financial performance of firms.

From Table 8 above, the hypothesis are rejected. In both stable and unstable environment, the gearing levels (low gearing, medium gearing one, medium gearing two, medium gearing three and high gearing) had positive effect on financial performance of firms. Low gearing, medium gearing one, medium gearing two and medium gearing three had positive effect on financial performance of firms in both stable and unstable environment. High gearing however has both positive effect on financial performance of firms in a stable environment and negative effect of financial performance of firms in unstable environment. In a stable environment, high gearing in comparison had the highest positive effect on financial performance of firms than medium gearing three, medium gearing two, medium gearing one and low gearing in that order.

Other studies that were conducted and are in support of our findings include a study by Caroline Githire (2015) on the effects of capital structure on financial performance of firms listed at NSE in Kenya which concluded that equity and short term debt financing enhanced financial performance while short term debt reduced financial performance.
Hassan et al. (2013) in his study on the influence of capital structure on firms performance on 36 Bangladesh firms listed in Dhaka stock exchange concluded that capital structure had negative impact on firms performance. Mahfuzah et al. (2012) in his study of capital structure and firm performance on 237 Malaysian listed companies found that firm’s performance measured by return on assets, return on equity and earnings per share had negative relationship with short term debt, long term debt and total debt as independent variables, he concluded that total debt has significant negative relationship with the performance of the firm. Tristan et al. (2015) in his study of capital structure and firms performance in Vietnam examined the impact of capital structure on firms performance in selected 147 firms listed on HCMC stock exchange. He found the impact of level of leverage on firm’s performance to be negative. Harwood (2015) in his study of effects of debt on firm’s performance on commercial banks listed in Nairobi securities exchange found that debt negatively affected firm’s performance though not statistically significant as measured by return on assets. Siyambola (2015) in his study on impact of gearing on performance of companies of Nigeria carried out a study to ascertain the roll gearing play in the performance of selected companies in Nigeria and revealed that efficiently managed gearing could lead to increase in earnings of the company. In his finding, gearing had direct relationship with the performance of the company and that gearing provided some advantages with positive impact on profitability. Tianyu (2013) examined the influence of capital structure on firm’s performance in both developed and developing markets, a sample of 1200 listed firms in Germany and Sweden and 1000 listed firms in China for the period 2003-2012 had been used in his study and he documented that capital structure had a significant negative effect on firm’s performance in China whereas, significant positive effect in two European Countries, i.e. Germany and Sweden, before financial crisis in 2008. Lawal et al. (2014) in his study of effects of capital structure on firm’s performance on manufacturing companies in Nigeria found that capital structure, total debt and debt to equity ratio were negatively related to firm performance and recommended that firms use more equity than debt in financing their business activities in as much as the value of the business can be enhanced using debt capital. Ibrahim (2009) also examined the influence of capital structure choice on firm performance in Egypt and the results suggested that firm performance had weak to no relationship with capital structure choice. Likewise, Khalaf (2013) also found negative and insignificant relationship between short term and long term debt ratio and return on assets and profit margin. Some studies that were conducted were in conflict with the findings in this study; first, a study by Margaritis and Psillaki (2010) observed a significant positive relation between leverage and firms performance, they found that leverage have positive effect on firms efficiency over the entire sample. Second, using panel data consisting of 257 South African firms over the period 1998 to 2009, Samuel (2013) found a positive and significant relation between financial leverage and firm’s performance. Third, Aliakbar, Seyed, and Pejman (2013) also found a significant positive link between capital structure and firm performance in the Tehran Stock Exchange. However, some authors got mixed results. In this, Kinsman and Newman (1998) found that earnings are negatively correlated with short-term debt, but are positive with long term debt in US corporations. A similar result was found by Mesquita and Lara (2003) in Brazil. In this study on the effect of capital structure gearing levels on financial performance of public and private sector firms in Kenya’s Coastal Counties, it is found that low gearing, medium gearing one, medium gearing two and medium gearing three have a positive effect on the financial performance of the firms in both stable and unstable environment while high gearing has positive effect on financial performance in a stable environment and negative financial performance in an unstable environment.

4.2 Test of Hypothesis

Regression was conducted to establish the impact of gearing on financial performance of firms. Hypothesis which were tested were:

Hypothesis 1
Ho: there was no significant effect of low gearing on financial performance of firms.

Hypothesis 2
Ho: there was no significant effect of medium gearing one on financial performance of firms.

Hypothesis 3

Ho: there was no significant effect of medium gearing two on financial performance of firms.

Hypothesis 4

Ho: there was no significant effect of medium gearing three on financial performance of firms.

Hypothesis 5

Ho: there was no significant effect of between high gearing on financial performance of firms.

From Table 8 above, the hypothesis are rejected. In both stable and unstable environment, the gearing levels (low gearing, medium gearing one, medium gearing two, medium gearing three and high gearing) had positive effect on financial performance of firms.

4.3 Empirical Results

Table 9 shows results for regression of models using low gearing, medium gearing one, medium gearing two, medium gearing three and high gearing on return on equity and return on assets.

4.3.1 Regression Analysis

The table below shows the results for the regression model using low gearing, medium gearing one, medium gearing two, medium gearing three and high gearing on return on equity and return on assets.

Table 9. Regression model using LG, MG1, MG2, MG3 and HG

<table>
<thead>
<tr>
<th></th>
<th>&gt;0 - &lt;30% (LG)</th>
<th>30% - &lt;35% (MG1)</th>
<th>≥35% - &lt;40% (MG2)</th>
<th>≥40% - &lt;50% (MG3)</th>
<th>&gt;50% (HG)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ROE</td>
<td>ROA</td>
<td>ROE</td>
<td>ROA</td>
<td>ROE</td>
</tr>
<tr>
<td>Gearing</td>
<td>0.589</td>
<td>0.702</td>
<td>1.121</td>
<td>0.786</td>
<td>0.810</td>
</tr>
<tr>
<td>Tangibility</td>
<td>1.762</td>
<td>-10.257</td>
<td>-5.78</td>
<td>1.266</td>
<td>-14.25</td>
</tr>
<tr>
<td>Size</td>
<td>-0.50</td>
<td>0.397</td>
<td>3.629</td>
<td>0.983</td>
<td>1.13</td>
</tr>
<tr>
<td>Growth</td>
<td>76.11</td>
<td>-34.52</td>
<td>-32.89</td>
<td>0.199</td>
<td>77.02</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.337</td>
<td>0.164</td>
<td>0.249</td>
<td>0.239</td>
<td>0.236</td>
</tr>
<tr>
<td>Observations</td>
<td>1717</td>
<td>1717</td>
<td>1717</td>
<td>1717</td>
<td>1717</td>
</tr>
</tbody>
</table>

Source: Field Survey, August 2018.

The regression coefficient of low gearing level for return on equity and return on assets are 0.589 and 0.702 respectively. This means that if low gearing changes by 0.1 it would increase return on equity and return on assets by 0.589 and 0.702 respectively, assuming all other factors remain the same. The hypothesis 1 is therefore rejected as low gearing has positive effect on the two measurement: return on equity and return on assets in the study. As a result, a proportion of low gearing in the capital structure would lead to higher return on equity and return on assets. The coefficient of fixed assets to total assets are 1.762 and -10.257 for return on equity and return on assets respectively. This indicates that if fixed assets to total assets changes by 0.1 return on equity and return on assets will move by 1.762 and -10.257 respectively. Overall fixed assets to total assets has positive effect on return on equity and negative effect on return on assets in this study. Size and growth have negative relation to return on equity and return on assets respectively. The coefficients of size is -0.50 for return on equity and 0.397 for return on assets. The coefficient for growth is 76.11 for return on equity and -34.52 for return on assets. The adjusted R² show that in the model for return on equity gearing explains 33.7% of all variability of return on equity and 16.4% for return on assets.

For the model using medium gearing one, the result shows that medium gearing one has positive impact on the return on equity and return on assets measures. The coefficients of medium gearing one for return on equity and return on assets are 1.121 and 0.786 respectively. This indicates that if medium gearing one increase by 0.1, it will increase return on equity and return on assets by 1.121 and 0.786 respectively if other conditions are constant. The hypothesis 2 is rejected as medium gearing one leads to higher return on assets and return on equity for firms. Fixed assets to total assets have negative effect on return on equity and positive effect on return on assets. The coefficient of fixed assets to total assets is -5.78 and 1.266 for return on equity and return on assets respectively. The size and growth have negative and positive relation to return on equity and return on assets respectively. The coefficients of size is 3.629 for return on equity and 0.983 for return on assets. The coefficient for growth is -32.89 for return on equity and 0.199 for return on assets. The adjusted R² show that in
the model for return on equity gearing explains 24.9% of all variability of return on equity and 23.9% for return on assets.

The result for the model using medium gearing two shows that it has positive effect on the return on equity and return on assets measures. The coefficients of medium gearing two for return on equity and return on assets are 0.810 and 0.612 respectively. This indicates that if medium gearing two increase by 0.1, it will increase return on equity by 0.810 and return on assets by and 0.612 respectively if other conditions are constant. The hypothesis 3 is rejected as medium gearing two leads to higher return on assets and return on equity for firms. Fixed assets to total assets has negative effect on return on equity and on return on assets. The coefficient of fixed assets to total assets is -14.83 and -1.617 for return on equity and return on assets respectively. The size and growth have positive relation to return on equity and return on assets respectively. The coefficients of size is 1.13 for return on equity and 0.115 for return on assets, the coefficient for growth is 77.02 for return on equity and 24.05 for return on assets. The adjusted R² show that in the model for return on equity gearing explains 23.6% of all variability of return on equity and 15.9% for return on assets.

The result for the model using medium gearing three shows that it has positive effect on the return on equity and return on assets measures. The coefficients of medium gearing three for return on equity and return on assets are 0.532 and 0.118 respectively. This indicates that if medium gearing three increase by 0.1, it will increase return on equity by 0.532 and return on assets by 0.118 respectively if other conditions hold. The hypothesis 4 is rejected as medium gearing three leads to higher return on assets and return on equity for firms. Fixed assets to total assets has positive effect on return on equity and return on assets. The coefficient of fixed assets to total assets is 1.528 and 5.57 for return on equity and return on assets respectively. The size and growth have positive and negative relation to return on equity and return on assets respectively. The coefficients of size is 0.509 for return on equity and -0.705 for return on assets, the coefficient for growth is 2.898 for return on equity and 22.59 for return on assets. The adjusted R² show that in the model for return on equity, gearing explains 14.0% of all variability of return on equity and 12.1% for return on assets.

The result for the model using high gearing shows that it has positive effect on the return on equity and return on assets measures. The coefficients of high gearing for return on equity and return on assets are 0.714 and 0.166 respectively. This indicates that if high gearing increases by 0.1, it will increase return on equity by 0.714 and return on assets by 0.166 respectively if other conditions hold. The hypothesis 5 is rejected as high gearing leads to higher return on assets and return on equity for firms. Fixed assets to total assets has positive effect on return on equity and return on assets. The coefficient of fixed assets to total assets is 75.25 and 99.19 for return on equity and return on assets respectively. The size and growth have positive relation to return on equity and return on assets respectively. The coefficients of size is 4.65 for return on equity and 12.625 for return on assets, the coefficient for growth is 11.05 for return on equity and 1.370 for return on assets.

The coefficients of low gearing, medium gearing one, medium gearing two, medium gearing three and high gearing are significant. They are significant at 5% for low gearing, 3% for medium gearing one, 6% for medium gearing two, 7% for medium gearing three and 10% for high gearing.

On the adjusted R² (see Table 9) gearing levels can explain variability of both return on equity and return on assets. For return on equity, gearing can explain variability at between 14% and 33.7% and for return on assets gearing can explain variability at between 12.1% and 64.1%. This means between 66.3% and 86% variability of return on equity are explained by other factors while between 35.9% and 87.9% variability of return on assets are explained by other factors.

The observations (1717) is obtained by taking the number of sample firms (139 firms) multiplied by the number of years under observation (2003 to 2015) and the 0.95 confidence level.
From Table 9, the coefficients 0.589, 1.121, 0.810, 0.532 and 0.714 are for low gearing, medium gearing one, medium gearing two, medium gearing three and high gearing respectively for return on equity. There is a rise from low gearing up to the optimum level at medium gearing one before a decline is observed at medium gearing two and gearings that follow. The coefficients 0.702, 0.786, 0.612, 0.118 and 0.166 are for low gearing, medium gearing one, medium gearing two, medium gearing three and high gearing respectively for return on assets. As in the case of return on equity, there is a similar pattern where there is lower coefficient at low gearing and a peak at medium gearing one before a decline is observed at medium gearing two and gearings that follow.

5. Summary, Conclusions and Recommendations

This chapter presents the summary, conclusions and policy recommendations of the study.

5.1 Summary

The study was conducted in order to determine the effect of capital structure gearing levels on financial performance of firms in Kenya’s coastal counties and whether this contributed to poor financial performance. Majority of firms in Kenya’s coastal counties (77% of the firms in the sample) used capital structure whose external finance had only one option; short term finance. The results shows that capital structure gearing levels of public and private firms in Kenya’s Coastal Counties where the growth pattern of gearing level was an ongoing process evolved in response to needs of the firm. It moved up to meet the needs of the firm. Internal reserves however suppressed the upward movement but with no consistency.
In the determination of the effect of gearing levels on financial performance of firms as measured by return on equity and return on assets, the hypothesis were that the gearing levels (low gearing, medium gearing one, medium gearing two, medium gearing three and high gearing) had no effect on financial performance of firms and was rejected. Low gearing has positive effect on the financial performance as measured by return on equity and return on assets. Medium gearing one increased return on equity and return on assets, medium gearing two and medium gearing three leads to higher return on assets and return on equity for firms. High gearing leads to higher return on assets and return on equity for firms in a stable environment and low returns in an unstable environment. Fixed assets to total assets has positive effect on return on equity and return on assets 57.55% of firms had gearing levels of over 30%. Without set target gearing levels the firms were likely to borrow more thereby falling into debt trap. The gearing has costs and more gearing has more costs. Higher gearing levels and associated costs were the cause of poor financial performance and failure of firms in the Kenya’s Coastal Counties.

In regard to gearing levels and financial performance of firms, low gearing, medium gearing one, medium gearing two, medium gearing three and high gearing have effect on financial performance of firms. In both stable and unstable environment, low gearing, medium gearing one, medium gearing two and medium gearing three had positive effect on financial performance of firms. Low gearing, medium gearing one, medium gearing two and medium gearing three had positive effect on financial performance of firms in both stable and unstable environment. High gearing however had both positive and negative effect on financial performance of firms. In a stable environment, high gearing had positive effect on financial performance of firms while in unstable environment high gearing had negative effect on financial performance of firms. In comparison high gearing had the highest positive effect on financial performance of firms than medium gearing three, medium gearing two, medium gearing one and low gearing in that order. In a stable environment, based on average return on equity, the gearing levels with the highest positive effect on financial performance of firms was high gearing, medium gearing three, medium gearing two, medium gearing one and low gearing in descending order. The best capital structure therefore is one which is high on debt (high gearing). In an unstable environment however, based on average return on equity, the gearing level with the lowest return on equity was high gearing followed by medium gearing three, medium gearing two, medium gearing one and low gearing in that order. Under stable conditions the higher the gearing therefore, the higher the expected earnings and vice versa.

Based on coefficients of gearing for return on equity and for return on assets, the higher the gearing the higher the expected return but at a diminishing rate. Returns are low at low gearing but are at peak at medium gearing one before a decline is observed at medium gearing two, medium gearing three and high gearing. Possibly, therefore the optimum level of gearing may be at medium gearing one level as coefficient is highest. The market shared price may be maximized at this range at minimum cost. Beyond this point, costs begin to rise as benefits begin to diminish.

5.2 Conclusion

In the assessment of the capital structure of public and private sector firms in the Kenya’s coastal counties, the majority of firms in Kenya’s coastal counties used capital structure composed of short term debt finance, the costs could be higher and thereby affecting financial performance of firms as capital structure with short-term debt financing and its accompanying costs add to cost of business and also threaten solvency of firms. Unlike short term debt, long term debt financing has some financial benefits. Interest rates are normally lower because these loans are usually secured with collateral like property and this makes its cost of borrowing lower than unsecured short term loans which have higher rates. This suggests that capital structure composed of short term debt financing and higher costs of debt financing was the cause of poor financial performance and failure / insolvency of firms in Kenya’s Coastal Counties.

The assessment of the capital structure gearing levels of the public and private sector firms in the Kenya’s coastal counties leads to the conclusion that firms in Kenya’s coastal counties had affinity for gearing and more affinity for higher gearing levels of over 30%. The growth pattern of gearing level of firms suggests that gearing was an ongoing process and that it evolved in response to needs of the firm. It moved up to meet the needs of the firm. Internal reserves however suppress the upward movement but with no consistency. This suggests that firms did not have set target capital structure gearing level.

The determination of the effect of the capital structure gearing levels on financial performance of public and private sector firms in the Kenya’s coastal counties leads to the conclusion that in a stable environment, there was a steady growth in net income. In such an environment high gearing (HG) had higher positive effect on financial performance of firms than medium gearing levels three (MG3), medium gearing level two (MG2),
medium gearing level one (MG1) and low gearing (LG). Return on equity was higher at high gearing level where under this environment, the best capital gearing level would be high capital gearing level. In an unstable environment however, net income growth fluctuates violently. In this environment high gearing had negative effect on financial performance of firms. Return on equity was lowest for firm with highest gearing than medium gearing three (MG3), medium gearing two (MG2), medium gearing one (MG1) and low gearing (LG). Return on earnings was highest for the firm with low gearing in this environment. This leads to the overall conclusion that gearing has positive and negative effects on firm’s financial performance. In a stable economic environment, the best capital structure is one which is high on debt as return on equity is highest. This is the objective of owners of firms which is wealth maximization. Therefore, under stable economic environment, high gearing leads to positive financial performance of firms. In an unstable economic environment however, the worst capital structure gearing level is one which is highly geared (HG), It leads to negative financial performance of firms.

With regard to tangibility, measured by fixed assets to total assets, it has been found to be both positive and negative in most results. This indicates that some firms in Kenya Coastal Counties have invested in fixed assets while some did not invest adequately in fixed assets. Some firms were able to take advantages of the fixed assets and use them effectively than others. As a result financial performances was affected.

Size was positively related to return on equity and return on assets of firms in Kenya’s Coastal Counties. Firms with higher fixed assets to total assets made use of assets to increase sales, consequently net income. Some firms with higher fixed assets to total assets made use of assets through better management and more investments to enjoy the advantages of economies of scale and financial slack.

Growth was positively related to return on equity and return on assets of firms in Kenya’s coastal counties. Higher growth minimized overall Weighted Average Cost of Capital (WACC) such that with more sales, there was more net income from use of the same assets leading to better financial performances of firms.

5.3 Recommendations

Several recommendations emanate from this study. First, the finance managers of firms undertake improvement programs like installing professional management systems. They should turn their firms into professionally managed outfits by installing professional systems of management, install accounting systems which are in conformity to required accounting standard and produce financial statement which are in conformity with the requirements of law and accounting standards devoid of creative accounting. After the improvement programs the firms should list their firm with the stock exchange to access a wide range of cheaper or permanent external finance in the form of long and short -term debt, hybrid and equity. Private placing could be a suitable avenue for equity and long term debt for family owned firms. Long term debt also has fixed interest rates that translate into consistent monthly payments and high predictability which makes it easy to budget the operational income that the firms need to make the payments.

Second, financial institutions are sources of short term finance. Although they are guided by economic rationality and profitability in their decision making, they ought to give back to the society in areas they operate. The study recommends that they be responsible to the society. They should form and own a Special Purpose Enterprise (SPV), list the special purpose enterprise (SPV) at NSE and also this special purpose enterprise should partner with medium, small and micro enterprises to assist them in setting up their businesses and to grow them. Through pre-emptive rights they can exit from those firms by selling their equity participation to their sponsors of the firms or offload them in the market at higher prices. This special purpose enterprise would source finance from the capital market on behalf of risky small enterprises which are in partnerships. They should also offer advisory and management services. Being listed and partnering with the listed special purpose enterprise has benefits which have effects on financial performances of firms.

Third, the study recommends that finance managers set target gearing levels for their firms. Where there is no gearing or gearing level is below or above the set target gearing level, appropriate capital restructuring measures be undertaken to bring the gearing level to the set target. Positive and negative effects of gearing levels on financial performance of firms and variability of return on equity and return on assets may be explained by the advantages and disadvantages of debt finance which explains that debt finance can be obtained promptly. Needs of the firms therefore are met at the right time; when finance was required most. This ensured continuity of firms and their activities at lower set up costs. Debt finance does not interfere with control of firms’. Owners of the firms by themselves or through managers have freedom of action and can invest in productive sectors which offer higher returns without restrictions. Interest paid on debt is tax deductible. Savings in corporate taxes could be invested in productive sectors and this created additional value for firms. Debt finance is outside financial injection, this financial injection if invested in the productive sectors will result in additional output, sales and
earnings leading to higher return on equity possibly higher dividends to the owners of the firms but up to the point where benefits of the debt finance exceed the costs. Firms take on debt to take advantages of debt finance. Debt finance however has disadvantages which are reasons for declining rate of benefits and negative effect. They are debt trap and the cost of debt. It is positive for firms to take on debt finance in order to take advantages of the benefits of debt finance. If unchecked however, more debt finance may lead firms to debt trap. This will interfere with their maneuverability. Firms may find themselves borrowing to finance an existing borrowing. Such borrowings may not go into productive sector of the firms. Inability to maneuver interfered with the financial performance of firms. Debt finance has fixed interest costs, more debt finance has more interest costs and the interest costs add to the costs of business. Short term debt finance has higher interest cost than long term debt finance. The higher the interest costs, the lower the financial performance and vice versa and thus the study recommends that firms should chose long term debt financing.

Fourth, payment of interest and principal are a legal obligation. The alternative to persistent failure in paying interest and principal may be bankruptcy. At this point firms would pay direct bankruptcy costs. Alternatively firms would pay indirect bankruptcy costs which are the costs of avoiding bankruptcy filing. Both of these costs are financial distress costs. A firm which is unable to meet its financial obligation is technically insolvent. Its equity at this point is zero, it is equal to debt. At this point the assets of the firm ought to be turned from equity holders to lenders. However turning of assets from equity holders to lenders is not an economic decision where equity holders loose nothing. Instead it is a legal decision which requires a legal process. The legal process will involve lawyers, accountants, bankers etc. who will be arguing over the case in court. This legal process will involve legal and administrative costs and an additional cost of keeping the firm in operation while the case is argued. All these costs are direct bankruptcy costs which may amount to bankruptcy tax to be paid by owners. This cost in effect will add to cost incurred by equity holders. The additional costs will make bankruptcy an expensive solution to equity holders and will affect financial performance. Because it is expensive to go bankrupt for equity holders, firms will spend enormous financial resources to avoid a bankruptcy filing. They will embark on corporate restructuring measures. A firm in financial distress may go into cost cutting measures to reduce costs of operations. The firm may divest, get rid of that part of business which may be creating problems, get rid of that part of business which does not fit in the firms’ core business in order to concentrate on core business and get rid of part of business to raise cash to reduce the levels of gearing. Management Buy Out (MBO), Management Buy In (MBI), Spin offs and Spin outs maybe the measures to be used. Other firms may not only get rid of a part of business perhaps a division but will also shed employment. All these are cost cutting measures for a firm in financial distress. They are indirect bankruptcy costs. Firms may always be on call to spend enormous resources to avoid bankruptcy filing which in turn affects their financial performance. More debt (HG) of firms provide conducive environment for lenders to impose loan covenants (restrictions). Loan covenants coupled with poor financial performance may lead to poorer financial performance. Persistent poor financial performance may eventually lead to firms’ failure.

The fifth recommendation of this study is that finance managers of firms set target capital structure gearing level for their firms up to medium gearing one where possibly, it may be at optimum level. Coefficient is high at this level and costs may be minimal while benefits are maximum. This may protect their firms from dangers of high gearing where costs could be high and benefits could be low. Profit before interest and Tax (PBIT), Valuation or cash flow approaches may be used in setting up the target capital structures gearing levels for their firms. Elements such as flexibility, risk, income, control and timing should be balanced. Growth opportunities, tax shield, operating strategy, loan covenants, financial slack, sustainability and feasibility, issue costs, capacity of raising funds and manager’s attitudes towards debt should be taken into account too. Capital structure issue is an ongoing process. The set target capital structure gearing level be allowed to vary up beyond the target to meet the financial needs of the firm. When needs subside appropriate capital restructuring measures be taken to reduce the gearing to the target level. If the gearing level goes below the target level, appropriate capital restructuring measures be taken to bring the gearing to the target level.

The sixth recommendation is that firms should also invest excess reserves in the money market through repurchase agreements in order to earn a higher return than the cost of finance sourced from external sources to finance operations.

Finally, some firms are operating in a stable environment while some are operating in unstable environment. Because macro-economic variables are uncontrollable, it is highly probable that firms will be operating in an unstable environment. Either way gearing is recommended. In a stable environment, high gearing is recommended. In an unstable environment, lower gearing levels are recommended.
5.4 Further Research

That gearing levels are able to explain part variation of financial performance, the other part variation of financial performance are explained by other factors. Research should be conducted to establish other elements which affect financial performance of firms in Kenya’s Coastal Counties and /or Kenya as a whole. The study also recommends that empirical research be conducted to establish the optimum capital structure gearing level for firms in Kenya’s Coastal Counties and in Kenya as a whole to provide a guide to finance managers, to determine the effect of gearing levels on financial performance of firms by sectors. Another study may be conducted to determine the effects of the benefits of special purpose enterprise on financial performances of the partnered firms in the U.K in order to justify its adoption for use in Kenya.

References


Bokhtiar et al. (2013). Influence of capital structure on firm performance-evidence from Bangladesh.


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