

## EFFECT OF CAPITAL STRUCTURE AND FINANCIAL PERFORMANCE OF FIRMS LISTED ON THE NAIROBI SECURITIES EXCHANGE

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### ABSTRACT

One of the issues that companies confront is determining the ideal financing mix that would increase a company's value and, therefore, the wealth of its shareholders. The main objective of the study was to determine the effect of capital structure on the financial performance of firms listed at the Nairobi Securities Exchange. The study variables were long-term debt to total assets, total debt to total assets, debt to equity ratio, and current ratio as well as one intervening variable, the firm's age. The research was anchored on three theories; agency theory, pecking order theory and the trade-off theory with a correlation analysis research design being adopted. The population of the study were the 62 companies listed on the NSE as of the 30th of June in 2022. The study employed secondary data collection methods, while the collected data was analyzed using both descriptive and panel regression. The study found that there is a small variation (sta. Dev. =0.0976) in return on assets among the firms under study from 2017-2021. The majority of the firms had a ratio of 0.0195 for return on assets implying that out of the net income generated, it is 1.95% of the total assets. Similarly, the study found that debt to equity ratio had the highest deviation (9.593) with a maximum ratio of 60.277 and a minimum of -70.383. In regard to the current ratio, explaining the liquidity of firms, the study established that some of the firms performs very well since their liquidity capacity was more than 65%. Based on inferential statistics, the study established that long-term debt to total assets has a negative (B=-0.022) and insignificant effect (a=0.513) on the financial performance of firms listed at the NSE. Consequently, profitability is reduced hence slow financial performance. Additionally, the study established a negative and significant relationship between the total debt to total assets ratio and the financial performance of the firms under study. The implication drawn is a result of poor debt terms in regard to the cost of debt thus resulting in poor financial performance. However, the study found that the current ratio positively (B=0.001) influences the financial performance of the firms under study. The study found that as the liquidity status of a firm is at an appropriate state, the firm is capable of handling short-term obligations such as payment of suppliers hence ensuring a constant supply of raw material which enhances production, sales and profitability. Generally, the study established that capital structure explains 12.2% of financial performance. Incorporating the age of the firm as an intervening variable enhances the contribution of capital structure towards financial performance to 12.4%, this implies that as the firm operates for more years, it adopts an appropriate capital structure that enhances financial performance.

### 1.0 INTRODUCTION

One of the issues that companies confront is determining the ideal financing mix that would increase a company's value and, therefore, the wealth of its shareholders. All shareholders want management to devise methods to increase their value while also assuring consistent returns over both the short and long term (Adeoye & Olojede, 2019). Choosing the optimal capital structure for a business is critical for maximizing shareholder value since how a company finances its operations is one of the variables that impact how well it performs. When a company is created or requires money right away to fund its capital expenditure options, the capital structure selection must be taken ahead of time (Cole, Yan & Hemley, 2015). Financial management must weigh the benefits and drawbacks of each option while also keeping in mind the best capital mix or the source that would cut down on capital expenditures before deciding on the best source of financing for the company. They are all considered to have an effect on the firm's worth, and the management will choose which of these capital structure elements to deploy. Making a financial decision is thus one of the main responsibilities of a finance manager.

A company's capital structure, according to Saidu (2014), is a combination of the many financial resources that are at its disposal to run the firm. How well a corporation manages its business is significantly influenced by its financial structure. Similarly, Shubita and Alsawalhah (2012) argued that organizational capital structure is an effective framework that segregates the sources of organizational capital especially from debt and stakeholder contributions. Das and Swain (2018) contend that one of the most crucial aspects of financial management that can be leveraged to raise shareholder value is the choice of financing that a company makes. Businesses have the choice of financing their assets with debt or equity, and they also have the freedom to choose varying ratios of these various capital components.

A company's financial performance may be evaluated against objectives including increased profit, increased market share, the creation of new products, great fiscal performance, and long-term sustainable growth (Galant & Cadez, 2017). Financial performance gauges how well a company is producing returns to raise shareholders' wealth. Financial performance, according to Bagnoli and Megali (2011), may also be seen as a subjective indicator of how well a company is using its resources to generate profits. There are many different approaches to evaluating financial performance. Some academics employ market indicators like Tobin Q (Awunyo-Victor and Bandu, 2012), while others embrace accounting indicators like ROA and ROE (Muritala, 2012; Oladeji and Olokoyo, 2014; Iraya et al., 2014), and many use both.

## 2.0 STATEMENT OF THE PROBLEM

Determining whether debt-to-equity ratio would maximize shareholder value while simultaneously lowering the company's cost of capital and improving the return on investment for the company's owners is one of the most crucial decisions that managers today must make. Although the management of companies have some leeway in determining how debt and equity should be combined, their goal is to do it in a manner that will optimize both the company's performance and its market value (Nassar, 2016). As a result, based on the provision of Nassar, one can get a glimpse of the influence of capital structure on the overall firm financial performance. Despite the positive contribution of capital structure on the performance of a firm, it is still difficult to tell the best combination or the framework of capital structure that will spearhead organizational objectives to realization (Maina & Ishmail, 2019). Previous

studies have failed to settle on the common capital structure that may be applicable to different firms in different industries. Numerous scholars have weighed in on this debate in one way or another.

According to research like Muritala (2017) and Okiro (2015), a company's capital structure and financial performance are positively correlated; nevertheless, some studies have shown that the two factors are negatively correlated (Wanyama&Olweny, 2013; Mutegi, 2016). In addition, conflicting results have been found in other studies on certain capital structure components (Birru, 2016). This study sought to bridge the existing gap by using four capital structure dimensions and one intervening variable, the firm's age. As a result of the existing, this research sought to answer the following research question; what is the effect of capital structure on the financial performance of firms listed at the Nairobi Securities Exchange?

## 3.0 LITERATURE REVIEW

### 3.1 Theoretical Review

#### 3.1.1 Trade-off Theory

The Modigliani and Miller (1963) trade-off theory states that management of an organization will choose how much debt and equity to use to sustain the entity's operations by considering the advantages and disadvantages of each source of financing. A firm should always choose a combination of funds that strikes a balance between the advantages and dangers connected with both debt and equity when deciding on an acceptable capital structure for their organization. This is consistent with the idea of a trade-off. As a result, management should constantly work to construct a capital structure % that will allow them to achieve a debt level that optimizes shareholder wealth, as this theory states that there is an ideal capital structure that maximizes company value. A further claim made by the theory is that the ideal capital structure exists and it maximizes corporate value (Ameer, 2013).

Ramadan (2015) used Jordanian businesses that trade on the Amman Securities Exchange's Industrial sector to conduct an empirical study of the trade-off theory. Data from the years 2000 to 2015 was used. The study's premise is that the trade-off theory holds true for Jordanian industrial enterprises if the profitability (ROA) and leverage findings show a positive and statistically significant association. The results demonstrate an unfavourable association between profitability (ROA) and leverage that is statistically significant (coeff=-0.071, p-value=0.019). This indicates that bigger Jordanian industrial enterprises have financial structures that depend more on equity financing and less on borrowings. This conclusion is consistent with that of Kinsman and Newman (2008), who found that less profitable businesses utilize debt more often than more successful, established businesses. This finding refutes the trade-off hypothesis, which holds that a company's debt ratio would increase as its profitability increases.

Borrowing from the theory, it is evident that the management of company that makes appropriate decision as far as organizational capital structure is concerned will stand a high chance of registering a significant financial performance. Having a balanced debt to equity ration ensures value creation of the investors since a significant proportion of the profits made was used to finance the debt acquired while the other significant proportion was the value

created for stakeholders. As a result, continuous plough back of profits will enhance growth of the firm and avoid bankruptcy.

## 3.2 Empirical Review

The researchers Cole, Yan, and Henley (2015) analyzed data from the industrial, health, and industrial sectors to evaluate whether or not company performance is impacted by the capital structure of US firms. The research analyzed the company's efficacy utilizing a range of various metrics using panel least squares regression. These measures include, among others, market value per share, return on assets, and operational return. The debt ratio and the turnover ratio, on the other hand, were used to arrive at a detailed assessment of the organization's capital structure. According to the results, both the operational return and ROA are negatively impacted by capital structure, and this effect is statistically significant. Furthermore, this influence is detrimental to both measures of ROA and operational return.

Degryse, de Goeij, and Kappert (2012) investigated how the characteristics of the businesses impact the capital structures of Dutch small and medium-sized organizations (SMEs). The study collected data from 165 small and medium-sized firms (SMEs) over a five-year period (2006-2010), and it concluded that whereas larger organizations with development ambitions utilize their revenues to speed the process of expansion, smaller businesses use their earnings to reduce their debt levels. Among the industry criteria that were taken into consideration during the investigation were things like the size, tangible assets, bet debtors, growth, and industry-specific tax rate.

In their study, Onguka, Iraya, and Nyamute (2021) explored the impact of corporate governance, organization ownership structure and firm's capital structure on the corporate value of NSE-listed firms. Panel data covering a five-year period from 2013 to 2017 and a census survey of 64 firms were utilized in the descriptive research technique. Leverage was used to gauge ownership structure while ownership concentration served as a proxy for capital structure. The concept also included family ownership, state ownership, and family ownership. Leverage was used to gauge capital structure, while state, family, foreign, and concentrated ownership were used to gauge ownership structure. Using the Tobin Q statistic, the company's performance was assessed. The findings of the study demonstrate that the ownership structure, financial structure, and corporate governance of the organization all had a significant and favourably skewed influence.

Njagi, Aduda, Kisaka, and Iraya(2017) investigated how business efficiency affected listed companies in Kenya's relationships between capital structure and company value. Results from this study were published in the journal Accounting and Financial Management. The data included in the study, which spanned the years 2008 to 2013, encompassed 30 non-financial companies that were traded on the NSE. We used the ratio of retained earnings to total capital, the gearing ratio, and the debt ratio as proxies for the elements that make up the capital structure. We utilized the distance from the operational efficiency frontier of the industry as a measure of business efficiency. In this work, panel data analysis and a model with fixed effects made up the approach. The findings indicate that the relationship between capital structure and share price-based business value is statistically significant in the negative direction. This was attributable to the rise in administrative and distribution expenditures that resulted from

funding the firm's fundamental business process efficiency enhancements. When operational efficiency is high, the research indicated that increasing administrative, financial, and tax expenses have a negative influence that is statistically significant on the link between firm value and capital structure. This was the general finding of the study.

Githire and Muturi (2015) carried out a census study of all the businesses that were listed in Kenya between the years of 2008 and 2013 in order to research the effect that Kenyan companies' capital structures have on their levels of financial performance. The research made use of publicly available data from the businesses that were discussed over the same time period. From the findings, having short-term debt, however, has been shown to be adversely and insignificantly connected with having a promising financial future. The research then comes to the conclusion that equity financing has a beneficial impact on the operation of the businesses and advises that in order to directly manage the business and have unrestricted access to its resources.

## 4.0 RESEARCH METHODOLOGY

Research design, according to Sekaran and Bougie (2016), relates to guidelines relating to the achievement of objectives with minimal distraction. The study adopted a correlation research design. A correlation research design aims at explaining phenomena by using quantitative data analyzed using mathematical based methods (Asamoah, 2014). Quantitative data is based on precise measurements using structured collection instruments and involves determination of statistical significance of findings using means of variables. Since the purpose of the study is to determine the nature of the connection that exists between two factors—namely, financial performance and capital structure—correlation analysis was an acceptable method to employ.

The 62 companies that were listed on the NSE as of the 30th of June in 2022 made the population of the research. Five years, from 2017 to 2021, was covered by the data collection. The long-term debt, total assets, total equity, and total liabilities, are the dimensions of the capital structure that data collection concentrated on. In addition, information on current assets and liabilities was collected. The data was collected using the data collection form that is provided.

Data analysis in the current study involved computation of descriptive and inferential statistics. Descriptive data analysis help group the data into interpretable findings whereas inferential statistics relates the dependent and independent variables. The study considered the dimensions of capital structure as the independent variables while the financial performance as the dependent variables.

The analytical model was as follows.

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \epsilon$$

**Table 1: Operationalization of Research Variables**

Type	Variable	Definition
<b>Dependent Variable</b>	Return on Assets –ROA (Y)	Net income / Total Assets

<b>Independent Variables</b>	Long term debt to Total Assets ( $X_1$ )	Long-term debt / Total Assets
	Total debt to Total Assets ( $X_2$ )	Total Liabilities / Total Assets
	Debt –to- Equity ( $X_3$ )	Total liabilities / Total Equity
	Current Ratio ( $X_4$ )	Current Assets / Current Liabilities
<b>Intervening Variable</b>	Age of the firm ( $X_6$ )	Log of the years since the firm was incorporated

## 5.0 FINDINGS AND DISCUSSION

### 5.1 Descriptive Statistics

The purpose of computing descriptive statistics was to offer a summary of the data in a format that would make it possible to understand the data appropriately. The statistics that were taken into consideration for this investigation comprised measures of dispersion in addition to the measures of central tendency, which included the mean, the minimum, and the maximum. In regard to the research findings, the measures of dispersion give a summary as well as the kind of spread; however, the measures of central tendency provide an extensive review of the study data. The data collected ranged from 2017 to 2021.

**Table 2 Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	245	-.694	.405	.01949	.097612
Long term debt to total assets	245	.000	2.543	.18767	.232177
Total debt to total assets	245	.004	3.560	.56832	.409637
Debt to equity	245	-70.383	60.277	1.10410	9.592572
Current ratio	245	.150	66.840	2.69420	5.904429
Age of the firm	245	.954	2.182	1.77832	.255464
Valid N (list wise)	245				

From the study findings, it is evident that the return on asset among the firms listed at the NSE fluctuated from -0.694 to the high of 0.405 but on average, the ROA of the firms in question was within 0.0195 over the five years period. Having a standard deviation of 0.09761, the implication drawn is that the spread as far as ROA is concerned among the firms and between the years under consideration was small. Additionally, the study established that the long-term



debt to total assets of the firms had a small deviation (Std dev. =0.2322) among the firms over the period under investigation. Based on the descriptive statistics, it is shown that the ratio of long-term debt to total assets of the firms under review deviated from 0.000 to 2.543 but on average, the firms had a ratio revolving within 0.1877.

The study also established that the ratio of total debt to total assets varied from a minimum of 0.004 to a maximum of 3.560 but on average, the ratio among the firms fell within 0.5683. As a result of the low standard deviation (0.4096), it is evident that the variation of the ratio between the years and among the firms has been small. In regard to debt-to-equity ratio, the findings show that the ratio ranged between -70.383 and 60.277. However, debt to equity ratio of majority of the firms was 1.1041. As indicated by the standard deviation (9.5926), there was a huge deviation in debt-to-equity ratio of the firms from 2017-2021.

In addition, the findings in regard to current ratio of the firm's shows that majority of the NSE listed firms have a current ratio of 2.6942 with the highest ratio being 66.84 and the lowest being 0.15. Based on the standard deviation (5.9044), the findings imply that the spread of current ratio among the NSE listed firms from 2017-2021 is significant. According to the findings, the age of the firms expressed as the log of the total number of years since incorporation, varied from 0.954 to 2.182 units but majority of the firms had 1.778 units. Having a low standard deviation (0.2555), the findings imply that spread in firm age was small.

## 5.2 Inferential Statistics

The study conducted regression analysis as its inferential statistics to establish the relationship between the predictor and the outcome variables. In this regard, the dimensions of capital structure of the firms listed on NSE were the predictor variables while financial performance measured by return on asset was the outcome variables. The study considered one intervening variable; the age of the firm. In order to establish the effect of the intervening variable, the study conducted two sets of regression analysis. One without intervening variable and the second analysis with intervening variable as one of the predictor variables. The findings are presented in tables based on the summary model, analysis of variance and the table of regression coefficients.

## 5.3 Regression Analysis without Intervening Variable

The summary model presents the coefficient of correlation and the coefficient of determination. The coefficient of correlation shows the degree of correlation between the dependent and independent variable whereas the coefficient of determination shows the percentage change in the outcome variable attributed to the dimensions of the predictor variables considered in the study.

**Table 3: Model Summary 1**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.349 <sup>a</sup>	.122	.107	.092401

a. Predictors: (Constant), Current ratio, Debt to equity, Total debt to total assets, Long term debt to total assets

The findings shows that the capital structure and performance of a firm have a positive but week correlation ( $r=0.349$ ). In addition, the results shows that current ratio, debt to equity, total debt to total assets as well as longterm debt to total assets explains 12.2% of the overall return on assets of the firms listed at the NSE. This is a small percentage which implies that other factors not within the dimensions of capital structure considered explains more than 80% of return on assets of the firms in question.

The analysis of variance (ANOVA) model is used to evaluate how well a regression model fits the data. The null hypothesis—that the model is well-fit for the regression data—cannot be disproved when the model's significance value is less than 5%, which is the threshold used to make decisions.

**Table 4 ANOVA 1**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.283	4	.071	8.297	.000 <sup>b</sup>
Residual	2.041	239	.009		
Total	2.324	243			

a. Dependent Variable: ROA

b. Predictors: (Constant), Current ratio, Debt to equity, Total debt to total assets, Long- term debt to total assets

As a result of the study's findings regarding ANOVA, it was determined that the model's significance value is 0.000, hence less than 5%, which suggests that the model was good of fit for the regression data.

On the other hand, regression coefficients show the correlation between each independent variable and its corresponding dependent variable. The significance of the effect an independent variable had on the variable under investigation serves as another basis for interpretation.

**Table 5 Regression Coefficients 1**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.075	.012		6.487	.000
Long term debt to total assets	-.022	.033	-.052	-.656	.513
Total debt to total assets	-.083	.015	-.346	-5.470	.000
Debt to equity	-.001	.001	-.060	-.975	.331
Current ratio	.001	.001	.082	1.021	.008

a. Dependent Variable: ROA



As shown from the findings, it is evident that without capital structure dimensions, return on assets of the firms listed on the NSE will have a constant ratio of 0.075. However, incorporation of long-term debt to total assets in the model reduces the ROA by 0.022 units though the effect might be insignificant (0.513). Additionally, the study found that increasing total debt to total assets ratio by one unit reduces ROA by 0.083 which according to the findings is significant effect on ROA (0.000). Furthermore, the study findings shows that increasing debt to equity ratio by one unit reduces ROA by 0.001 units which is insignificant according to the study findings. In regard to the current ratio of the firms under study, it was established that adding one ratio unit enhances ROA by 0.001 which is significant (0.008) in the long run. The findings thus presents the regression model based the significance of the coefficients as follows;

$$ROA=0.075 - 0.083(\text{total debt to total assets}) + 0.001 (\text{current ratio})$$

#### 5.4 Regression Analysis with Intervening Variable

Incorporation of intervening variable was due to the researcher’s aim to establish its effect on the relationship between capital structure and financial performance of NSE listed firms.

**Table 6 Model Summary 2**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.353 <sup>a</sup>	.124	.106	.092295

a. Predictors: (Constant), Age of the firm, Debt to equity, Current ratio, Total debt to total assets, Long term debt to total assets

Based on the model summary, the findings shows that the correlation between capital structure and financial performance of the firms under review improved slightly from 0.349 to 0.353. Similarly, the coefficient of correlation improved from 0.122 to 0.124 hence implying that the age of the firms listed at the NSE intervened 0.2% of the relationship between capital structure and financial performance.

**Table 7 Regression Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.107	.045		2.397	.017
Long term debt to total assets	-.020	.033	-.048	-.612	.541
Total debt to total assets	-.085	.015	-.355	-5.536	.000
Debt to equity	-.001	.001	-.058	-.945	.346
Current ratio	.001	.001	.080	.988	.324
Age of the firm	-.018	.024	-.047	-.753	.452

a. Dependent Variable: ROA

The regression coefficients after the introduction of the intervening variable changed slightly hence changing the structure of the model. In this regard, the regression model took the forms;

$ROA = 0.107 - 0.02(\text{long term debt to total assets}) - 0.085(\text{total debt to total assets}) - 0.001(\text{debt to equity}) + 0.001(\text{current ratio}) - 0.018(\text{firm age})$

## 6.0 DISCUSSIONS

The study findings are in tandem with Adeoye and Olojede (2019) that opined that long term debt is expensive to finance operational activities of the firm. The interest paid over a long period of time reduces the capacity to plough back profits hence reducing financial performance of a firm.

Additionally, the study aimed to establish the effect of total debt to total assets. As shown from the findings, there is a negative relationship between total debt to total assets ratio and financial performance. This finding implies that as total debt increases, the ability of organizational assets to generate profits is low hence reducing financial performance of the firms. The study findings are in supports earlier findings by Muazu, Tasminand Javaid (2021) that financing organizational capital through debt is a trap to reduced profitability. Paying of interest instead of ploughing back profits leads to slow financial growth hence reduced financial performance.

In regard to the relationship between debt to equity and financial performance of firms listed at the NSE, the study established that as the ratio goes up, financial performance reduces significantly. The results thus imply a negative relationship between debt-to-equity ratio and financial performance. The findings concur with Ithessonthi and Tongurai (2015) that having more debt than stakeholders' funds puts an organization at a brink bankruptcy. Failure to finance the debt may result to the firm put under receivership hence may lead to poor financial performance.

The study findings also established a positive relationship between current ratio and financial performance. This imply that when a firm is able to meet their daily obligations, suppliers will continue delivering to the organization hence increased production which implies increased sales and profitability. As argued by Liargovas and Skandalis (2015), the liquidity situation of a corporation has been demonstrated to significantly improve performance. This is owing to the fact that a business organization may use liquid assets to support its operations and investments when it is not feasible to acquire funding from outside sources.

## 7.0 CONCLUSION

In reference to the study findings, the study makes conclusion as follows. Firstly, the study concludes that return on asset among the firms listed at the NSE varies with old and large firms registering better return on assets. The study also concludes that ROA as a measure of financial performance is affected by capital structure adopted by firms. The long term debt to total assets may have beneficial impact on financial performance if the interest rate is appropriate. However, when interest rates are high, it negatively affects financial performance since the cost of finance the debt capital will be expensive.

Additionally, the study concludes that having more percentage of debt capital in shareholders' funds will affect financial performance negatively. This implies that firm's equity will comprise of more debt finance resulting to non-payment of dividends which is an indicator of financial performance. The study also concludes that current ratio of a firm is a significant capital structure component for greater financial performance. A liquid firm is in capacity to meet its short-term obligation which is necessary for greater financial performance.

## 8.0 RECOMMENDATIONS

Based on the conclusion of the study, the study recommends that firms listed at the NSE should reconfigure the terms considered for acquiring long term debts. Some of the firms are performing poorly due to the high cost of long-term debt. This will result to low financial performance. Similarly, having an optimum ratio between total debt and total assets is a precaution of ensuring a firm does not over-borrow hence striking a balance that can enhance profitability?

In addition, the study recommends that appropriate measures should be put in place to ensure firms listed at the NSE have optimum level of liquidity. This will guarantee payment of short-term obligations and reduce creditors the company and in turn, maintain a good credit record that debtors can trust the firm in future when seeking debt capital.

## 9.0 LIMITATIONS OF THE STUDY

Some restrictions were encountered during the research, but they were overcome to prevent them from preventing the attainment of the study's goals. The study was restricted to the five-year period from 2017 to 2021. However, it was decided that the five-year time frame would be suitable for analysing the businesses and drawing conclusions about the research factors.

Additionally, the examination was limited to secondary data obtained from financial information of companies registered on the NSE. The evidence had limits like earnings control even though it was reliable since it came from audited books of accounts.

The research also gathered information for 49 companies among those listed on the NSE for which the full set of data was accessible. To draw suitable inferences and conclusions, the data collected is typical of the research population.

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