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Mutuality between Capital Structure and Financial Performance: A Case of Listed Commercial and Service Sector Firms in Kenya

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Abstract: *Capital structure refers to the mix of debt and equity used by a business organization to finance its assets (Ubesie, 2016). Usually, a firm can adopt different proportions of debt, equity, or other financial arrangements. The basisof research on capital structure is traced toModigliani and Miller's (1958) theory. The theory offers insight into an organization's capital structure decisions in a capital market that is free of transaction costs, taxesand other frictions.The purpose of this study was to determine the effects of capital structure on the financial performance of commercial and service sector firms listed in the Nairobi Securities Exchange in Kenya. The study sought to address the following specific objectives: the effects of long-term debt to equity ratio on return on assets, return on equity and earnings per share. The researcher employed descriptive research design to describe the variables used in the study. Later, explanatory research was used to explain the causal relationship between the independent variable and the dependent variables. The study population was made up of ten commercial and service sector firms listed at the Nairobi Securities Exchange as at 31st December 2017. Convenience sampling technique was used to select the nine firms based on the information available in their official websites and the Nairobi Securities Exchange research hand books. A checklist was used to collect data. Data collected was analyzed using both descriptive and inferential statistics with the aid of Statistical Package for Social Sciences (SPSS) version 24. The annual financial statements of 9 listed firms was used for this study covered a five-year period from 2013-2017. Regression analysis results showed that there wasa significant positive correlation between long-term debt to equity ratio and return on assets, return on equity and earnings per share.Further tests on the statistical significance as presented by the p-values reveal that the variables were statistically significant. The paper concluded that capital structure had a statistically significant effect on firms' financial performance.*

Keywords: *Capital Structure, Financial Performance, Commercial and Service Sector Firms, Nairobi Securities Exchange, Kenya*

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I. Introduction

Capital structure irrelevance theory that was proposed byModigliani and Miller (1958) argued that the value of a levered firm will always be equal to the value of unlevered firm. Under such circumstance then, capital structure financing decision keen on establishing the mix of debt and equity therefore is irrelevant. However, for the theory to hold, certain assumptions must be made namely: the market is perfect with no taxes or any form of market friction that could be attributed to transaction or bankruptcy costs for that matter. Other assumptions include investors and firms can borrow or lend at the same rate and debt to equity ratio of a firm has no effect on its market value.

After the Modigliani and Miller (1958) theory, other researchers came up with five other main theories of capital structure. Modigliani and Miller (1963) modified the irrelevance theory and came up with the relevance theory of capital structure. They argued that capital structure is a determinant of firm value. The theory was based on the premise interest on debt in most jurisdictions is a tax allowable expense and hence tax saving.The Agency theory according toJensen and Meckling (1976) held that a firm may achieve an optimal capital structure if it reduces costs arising from the conflict between firm owners, its managers and debt holders. Debt could be used to control managers extravagancies by reducing free cash flow that could easily be misappropriated by managers by ensuring that interest attached to debt instruments is paid promptly. Information signaling theory holds the view that a firm's capital structure choice gestures to the outside investor the information that the insider possesses. It argues that due to the problem of information asymmetry, it is difficult for creditors or investors to assess the level of risk they face engaging with the firm hence the need to rely on what is communicated by the insiders (Ross, 1977). Scott (1977) static trade-off theory suggests that in the long-run every firm should strive to have a reasonable debt ratio in its capital structure. By so doing, the firm

can benefit a great deal for using debt because it is a cheap source of financing. Although there are tax savings associated with use of debt, the potential of financial distress costs especially for firms that rely on too much debt to finance its activities can negate these gains. Hence, the need for finance managers in business enterprises to strive to strike a trade-off between tax benefits and the disadvantages that could arise due to the higher risk of financial distress. The theory holds that the more profitable a firm is, the higher the capacity in terms of debt-servicing hence a higher debt ratio and the reverse is true (Chin, Zakaria, & Keong, 2017). The pecking order theory is a consequence ofasymmetric information(Myers & Majluf, 1984). The theory emphasizes that firms prefer to use internally generated namely: retained earnings or excess liquid assets over external sources of finance. Firms will opt for external financing when internal sources of finance are not available(Frank & Goyal, 2003).

Experimental evidence from studies regarding the relationship between capital structure and firms' financial performance in Kenya is conflicting and mixed. Mwangi, Makau and Kosimbei (2014) study on 42 non-financial companies listed in the Nairobi Securities Exchange concluded that financial leverage had a statistically significant negative relationship with firm performance as proxied by return on assets and return on equity. Githire and Muturi (2015) studied all firms listed at the Nairobi Securities Exchange between 2008 and 2013. Their findings also exhibited a negative relationship between capital structure and short-term debt. So were the findings by Banafa, Muturi and Ngugi (2015) on listed non-financial firm in Kenya.

On the other hand, the following studies exhibited positive relationship between capital structure and financial performance: Kirimi (2017) study on energy sector listed firms, Chitiavi, Musiega, Alala, Musiega and Maokomba (2013)study on non-listed firms, Nyawira, Jagongo and Ndede (2017) study on commercial banks in Kenya and Murkomen, Njeje and Cherono (2017) study on Saccos in Baringo County.

Studies carried out by Ubesie (2016) andAl-Taani (2013)showed no relationship between capital structure and some financial performance measures such as return on equity and earnings per share.The inconsistency in findings of previous studies presents a conceptual knowledge gap. Besides, the researcher is not aware of any extant literature that comparecapital structure and financial performance of listed commercial and service sector firms in Kenya. Therefore, this researchis intended to address this concern.

The general objective of this study is to assess the effect of capital structure on financial performance of commercial and service firms listed at the Nairobi Securities Exchange for the period 2013-2017.Specifically, the study sought to determine the effect of capital structure on firms' return on assets, return on equity and earnings per share. Data of 9 firms listed at the Nairobi Securities Exchange between 2013 and 2017, representing 45 observations was used for the study. The study would be significant to managers in deciding the right mix of equity and debt to finance firms' operations and to maximize firm value at the same time contributing to Kenya's economic development. The next section of this paper presents related literature on the topic of study followed by the methodology to be used in the study. The third section discuses research results. Conclusion and recommendations for future researches discussed in the final section.

II. Literature Review

2.1 Introduction

This chapter reviewed the literature regarding previous studies on the relationship between capital structure and firms' financial performance. The chapter is divided into other sections namely: Section 2.2 which discussed the association between long-term debt to equity ratio and return on assets. Section 2.3 discussed the relationshipbetweenlong-term debt to equity ratio and return on equity. Finally, section 2.4 looked at the effect of long-term debt to equity ratio on firms' earnings per share.

2.2 Effect of Long-term Debt to Equity Ratio on Return on Assets

Assets may be classified into fixed assets, current assets, tangible and intangible assets (Anderson, Spade & Jackson, 1990). If assets are utilized efficiently, the firm improves its performance. The financial ratio used to measure this effectiveness is the return on assets which is calculated by dividing net income by total assets. This ratio is directly proportional to an organization's future growth (Jami & Bahar, 2016).Skoogh and Sward (2015) in their study on firms listed in the Swedish stock exchange for the period 2005-2014 established a positive relationship between asset tangibility and debt levels. It is therefore important to note that tangible or fixed assets play an important role in as far as capital structure decisions of a firm are concerned. This assertion is anchored on the static trade-off and pecking order theories of capital structure. The higher the asset value due to higher growth potential, the higher the debt and equity values too.

Margaritis and Psillaki (2009) study on a sample of manufacturing French firms established a positive relationship between capital structure and firm efficiency. The study was consistent with Jensen and Meckling (1976) theory of capital structure regarding agency costs which stipulates that the higher the leverage, the higher the firm efficiency.Tailab (2014) on the other hand was of a different view. Their study on the relationship between capital structure represented by total debt and firm performance represented by return on assets and

return on equity revealed a negative association. The study involved 30 sampled energy firms in America for a 9-year period spanning from 2005 to 2013. Similar findings applied to the studies on firms from 14 European countries(Gleason, Mathur & Mathur, 2000).

Habimana (2014) study on effect of capital structure on financial performance of firms doing business in emerging markets revealed that the two variables were negatively related with one another. The study analyzed a considerable sample of companies operating in China, Russia, Eastern Europe, Asia, Middle East and Africa. Similar findings were exhibited by Vătavu (2015)regarding 196 Romanian listed firms for the period 2003-2010 and Nassar (2016)study on 136 industrial companies listed at the Turkish Stock Exchange in Istanbul for the period 2005-2012.

In Ghana, Prempeh, Sekyere and Asare (2016)study on the effect of debt policy on firms' financial performance revealed that long-term debt had a negative effect on return on assets. A sample of 5 manufacturing firms listed on the Ghana Stock Exchange for the period 2005-2015 was used. Same was the case with Enekwe, Agu and Nnagbogu (2014) study on Nigerian pharmaceutical companies between 2001 and 2012 and Mwangi, Makau and Kosimbei, (2014)research on the mutuality between financial leverage and firm performance for non-financial firms listed in the Nairobi Securities Exchange in Kenya.

2.3 Effect of Long-term Debt to Equity Ratio on Return on Equity

Gill, Biger and Mathur (2011) studied the relationship between financial leverage and profitability on some 272 American service and manufacturing companies listed in the New York Stock Exchange between 2005 and 2007. The study showed a positive correlation between capital structure and firms' profitability proxied by return on equity. In Malaysia, Shahzlinda and Shahdila (2015)revealed that long-term debt and total debt were found to exhibit a significant positive relationship with return on equity.

Musah (2017) study on commercial banks in Ghana revealed that long-term debt and short-term debt were negatively correlated with both return on assets and return on equity. However, total debt had a positive relationship with the two profitability ratios. The study results agree with the pecking order theory which contends that profitable firms prefer to use internally generated funds to finance their expansion programmes as opposed to debt, hence negative relationship between leverage and profitability. On the other hand, however, Baah-acquah, Freeman and Ellis (2017)study revealed a positive relationship between capital structure and return on equity.

In Kenya, Githire and Muturi (2015)study on listed firms showed that long-term debt had a positive relationship with firm performance. Same was the case with Kinyua and Muriu (2017) study on listed agricultural firms and Kirimi, Simiyu and Murithi (2017) study on savings and credit cooperative societies in Tharaka Nithi County.

2.4 Effect of Long-term Debt to Equity Ratio onEarnings Per Share

Chong, Law and Yao (2016) study dubbed "the debt-equity choice of Japanese firms"concluded that leverage ratio measured as a ratio of debt and equity had a negative relationship with firms' stock performance.Salim and Yadav (2012) study on the relationship between capital structure and firm performance on listed Malaysian firms for the period 1995-2011 revealed that firm performance proxied by earnings per share had a negative relationship with long-term debt, short-term debt and total debt.

Basit and Irwan (2017) study on Malaysian listed product firms established a significant negative relationship between debt to equity ratio and earnings per share. total debt ratio had a positive relationship with earnings per share and total debt had a weak link with earnings per share. The study concluded by saying that firms can reduce agency problems and enjoy tax benefits by raising funds through debt.

Acheampong, Agalega and Shibu (2014)researched on the relationship between financial leverage and stock returns on some 5 listed manufacturing firms in Ghanafor the period 2006-2010. Using overall industrial data, the study showed a significant negative association between leverage measured in terms of debt to equity ratio and stock price. However, at the individual company level, the correlation was not stable. So were the findings by Bahreini, Baghbani and Bahreini (2013) study on 145 listed Iranian firms between 2005 and 2006 and Abdullah, Parvez, Karim and Tooheen (2015)research on 5 manufacturing firms in Bangladesh between 2008 and 2012.

Chemutai, Ayuma and Kibet, (2016) study on banks listed at the Nairobi Security Exchange for the period 2009-2015 concluded that debt, equity, bond and retained earnings had a positive relationship with firms share price.

III. Research Methodology

3.1 Introduction

This chapter presented the research methodology that was used in carrying out the study. It contained the research design, the population and sampling design employed, data collection methods, research procedures

and data analysis method used in the studyaimed at helping the researcher, achieve the purpose of the study. A descriptive research design was used because the study sought to determine the relationship between capital structure and financial performance of commercial and service sector firms listed in the Nairobi Securities Exchange for the period 2013-2017. This study used long-term debt to equity ratio as the independent variable. The dependent variables used to measure profitability were return on assets, return on equity and earnings per share. The population used in the study comprised of nine out of ten commercial and service sector firms listed in the Nairobi Securities Exchange as at 31st December 2017.Thus, convenience sampling was used in the study. This study used secondary data obtained from the audited financial statements of the targeted firms. A checklist was used to gather information about the targeted firms' capital structure measured in terms of long-term debt to equity ratio representing the independent variable. Information regarding the dependent variables namely: return on assets, return on equity and earnings per share was also gathered. Long-term debt and equity figures were used to calculate the independent variable. Profit after tax, total assets, shareholders' equityand number of outstanding shares figures were used to calculate the dependent variables. The secondary data gathered from published accounts of the firms under review was assessed using descriptive statistics. The Statistical Package for Social Sciences (SPSS) was used to analyze and test for the reliability of the secondary data collected. Correlation analysis was used to describe the relationship between capital structure and financial performance of firms used in the study. Regression analysis was used to explain the causal relationship between the variables used in the study. Finally, data was presented in form of tables and figures.

IV. Results And Findings

From Table 4.1 below, long-term debt to equity ratio had mean value of -1.02 with a standard deviation of 7.58. The standard deviation of 7.58 which is greater than the mean shows that the mean value of the independent variable is unreliable. Among the dependent variables, return on assets had the highest mean of -0.14 followed by return on equity at -0.83 and lastly, earnings per share at -38.29. However, all of them had standard deviations greater than their individual means. Hence, the mean values could be construed to be unreliable.

Table 4.1: Descriptive Statistics on Variables

	N	Minimum	Maximum	Mean	Std. Deviation
Long-term Debt to Equity Ratio	45.00	(48.58)	6.03	(1.02)	7.58
Return on Assets	45.00	(5.34)	0.23	(0.14)	0.81
Return on Equity	45.00	(46.27)	7.74	(0.83)	7.09
Earnings Per Share	45.00	(17.23)	16.12	(38.29)	253.03

Table 4.2: Pearson Correlation between Long-term Debt to Equity Ratio and Return on Assets

		Return on Assets	Long-term Debt to Equity Ratio
Return on Assets	Pearson Correlation	1	.840**
	Sig. (2-tailed)		0
	N	45	45
Long-term Debt to Equity Ratio	Pearson Correlation	.840**	1
	Sig. (2-tailed)	0	
	N	45	45

** Correlation is significant at the 0.01 level (2-tailed).

According to the Pearson correlation in Table 4.2above, the relationship between long-term debt to equity ratio and return on assets was significantly positive at 0.840. This means that 84% of the change in return on assets can be explained by variation in long-term debt to equity ratio. The remaining 16% can be explained by other factors not captured in the model.

Table 4.3: Long-term Debt to Equity and Return on Assets Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.840a	0.705	0.698	0.03689

a Predictors: (Constant), Long-term Debt to Equity Ratio

The study sought to determine the effect of long-term debt to equity ratio on return on assets. Long-term debt to equity ratio was the independent variable whereas return on assets was the dependent variable. The adjusted R square was 0.698. This means that 69.8% change in the dependent variable return on assets can be explained by variation in the independent variable, long-term debt to equity ratio. Other factors not captured in the model are responsible for 30.2% changes in return on assets.

Table 4.3:Pearson Correlation between Long-term Debt to Equity Ratio and Return on Equity

		Return on Equity	Long-term Debt to Equity Ratio
Return on Equity	Pearson Correlation	1	.824**
	Sig. (2-tailed)		0
	N	45	45
Long-term Debt to Equity Ratio	Pearson Correlation	.824**	1
	Sig. (2-tailed)	0	
	N	45	45

** Correlation is significant at the 0.01 level (2-tailed).

The Pearson correlation in Table 4.3 above indicates that the relationship between long-term debt to equity ratio and return on equity was significantly positive at 0.824. This means that 82.4% of the change in return on equity can be explained by variation in long-term debt to equity ratio. The remaining 17.6% can be explained by other factors other than the independent variable captured in the model.

Table 4.3: Long-term Debt to Equity and Return on Equity Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.824a	0.678	0.671	0.04568

a Predictors: (Constant), Long-term Debt to Equity Ratio

The researcher did regression using long-term debt to equity as the independent variable while return on equity was used as the dependent variable. The aim was to establish whether there existed a relationship between the two variables. Table 4.3shows a significant positive correlation between capital structure and return on return on equity because the adjusted R square was 0.671. The model can explain 67.1% % of changes that happened in the dependent variable, return on equity due to capital structure changes. The remaining 32.9 % of the changes in return on equity can be explained by other factors.

Table 4.4:Pearson Correlation between Long-term Debt to Equity Ratio and Earnings Per Share

		Earnings Per Share	Long-term Debt to Equity Ratio
Earnings Per Share	Pearson Correlation	1	.920**
	Sig. (2-tailed)		0
	N	45	45
Long-term Debt to Equity Ratio	Pearson Correlation	.920**	1
	Sig. (2-tailed)	0	
N		45	45

** Correlation is significant at the 0.01 level (2-tailed).

Table 4.5: Long-term Debt to Equity and Earnings Per Share Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.920a	0.846	0.842	0.02903

a Predictors: (Constant), Long-term Debt to Equity Ratio

Table 4.4 and Table 4.5 above shows a strong positive relationship between capital structure and earnings per share because the adjusted R square was 0.842. This is translated to mean that 84.2% of the changes in the dependent variable can be explained by changes in the independent variable. The Pearson correlation in Table 4.4 above indicates that the relationship between long-term debt to equity ratio and earnings per share was significantly positive at 0.920. This is an indication that 92% of the change in earnings per share can be explained by variation in long-term debt to equity ratio. The other 8% can be explained by other factors.

V. Conclusions

The study concluded that there was a significant positive correlation between capital structure and return on assets, return on equity and earnings per share. The adjusted R square values indicated that an increase in debt to equity ratio leads to anincrease in return on assets, return on equity and earnings per share by 0.698, 0.671 and 0.842 respectively.

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