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Effect of Capital Structure on Return on Assets of Kenya Tea Development Agency Tea Manufacturing Factories in Kericho and Bomet Counties, Kenya

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Abstract:

Capital structure decision is the mix of debt and equity that a company uses to finance its business. This study aimed to investigate the effects of capital structure on KTDA tea processing factories' performance in Kericho and Bomet counties. This study was carried out because it was not clear how capital structure influences the financial performance of tea processing factories. Secondary data were used in the study where the performance measure of return on assets was used as the dependent variable and four capital structure measures (including short-term debt, long-term debt, total debt to total assets, and total debt to total equity) as an independent variable. The study sample was from all the nine tea factories in Region Five of KTDA that had been in operation for more than five years and hence the readiness of Annual Reports for the financial year 2008-2013. The study employed a panel fixed effect regression model to establish the effects of capital structure on the ROA for the tea processing factories. The results indicate that ROA is significantly and positively associated with long-term debt and total debt at 1% and 5%, respectively, while on the other hand, short-term debt shows a negative and significant relationship at 5%. The negative relation between short-term debt and the profitability of tea processing factories means that supplying finance through short-term debts does not lead to profitability. The study recommends that the tea processing factories must consider using an optimal capital structure since it will minimize the cost of capital and, hence, the cost of financing the tea processing operations.

Keywords: Capital structure, financial performance, Return on Assets (ROAs)

1. Introduction

The impact of strategic factors and industry conditions on profitability and persistence of profits has become the main tasks on the executive agenda (Waring, 1996) and it is accepted that managing the intellectual capital of the firm is a major strategic asset capable of generating sustainable superior firm performance (Barney, 1991). To fully maximize the firm's profitability and enhance a firm's future, relational capital, which gathers the value of the relationship with external agents, has to be maintained. It is now broadly recognized that post-modern organizational forms based on network structures are predicted to be successful relationships (Gulati, Norhia & Zaheer, 2000). The interconnection of network structures enables organizations to cope with levels of uncertainty that bureaucracy could never handle, hence making a critical contribution to organizational effectiveness (Graen & Scandura, 1987).

According to Damodaran (2001), capital structure decision is the mix of debt and equity that a company uses to finance its business and in a world without friction, there is no difference between debt and equity financing as regards the value of the firms. Thus, financing decisions add no value and are, therefore, of no concern to the managers. Evidence would suggest that this does not hold in reality. However, today, capital structure is one of the important financial decisions for any business organizations because of the need to maximize return to stakeholders and also have an effect on the value of the firm. Besides that, the impact of the decision will help the firm's ability to deal with its competitive environment. Capital structure includes equity shares, debt, reserves and surpluses of an enterprise. The historical attempt to build the theory of capital structure began with the presentation of a paper by Modigliani and Miller (MM) (1958), who indicated the conditions under which the capital structure becomes relevant or irrelevant to financial performance. They further illustrated and proved that capital structure is irrelevant in a perfect market condition where there are no taxes, no transaction costs and homogenous expectations.

Furthermore, according to Gleason, Mathur and Mathur (2000), the utilization of different levels of debt and equity in the firm's capital structure is one such firm-specific strategy used by managers in the search for improved performance. Consequently, most firms have strived to achieve an optimal capital structure in order to minimize the cost of capital or to maximize the firm value, thereby improving its competitive advantage in the marketplace through a mixture of debt and equity financing. In addition, selecting the right type of debt is an equally important issue as opting for an appropriate debt-to-equity ratio. However, agency costs are the costs that arise from the principal-stakeholder relationship, such as between shareholders or managers of the firm and debt-holders. Moreover, the given incentives to the firm will benefit shareholders at the expense of debt-holders. Thus, debt-holders need to restrict and monitor the firm's behaviour and

incorporate the costly monitoring devices of contractual covenants into debt agreements to protect the debt-holders. Therefore, firms with relatively higher agency costs due to inherent conflicts between the firm and the debt holders should have lower levels of outside debt financing and leverage.

Companies need both debt and equity financing, but the ratio for debt to equity financing is different based on the situation. Debt financing and equity financing are not substitutes for each other, but they are different in nature and have different impacts on the profitability of an organization. Therefore, the process of increasing leverage through the acquisition of debt has been cited to have implications for firm value and performance. Furthermore, most companies prefer debt financing because they anticipate a higher return and hence, the use of leverage is one way to improve the performance of the firm. Most of the decision-making processes related to the capital structure depend on attributes that cause the most benefits related to debt and equity financing.

Tea production is the major cash crop to both smallholder and large-scale farmers in Bomet and Kericho counties, as the enterprise occupies approximately 60 percent of their land. The establishment of a tea processing factory is a capital-intensive operation and these operations are largely funded by tea growers/farmers. Pandey (2005) found that the degree of business risk, which is a major determinant of capital structure, is aggravated if companies are highly capital-intensive and have a high proportion of fixed costs. Therefore, good decision-making in terms of the proportion of a firm's capital structure will have a positive impact on the firm performance. However, research that has been done has focused on those listed companies trading in security exchange and left other companies outside the trading sector, such as tea processing factories. In addition, it is not clear how capital structure influences the performance of tea processing factories in Region Five of Kenya Tea Development Agency. Against this backdrop, this study sought to determine the effect of changes in capital structure on Return on Assets of KTDA tea processing factories in Kericho and Bomet Counties.

In seeking to determine the effect of changes in capital structure on Return on Assets of KTDA tea processing factories, the following research hypothesis was used.

- H_{01} : Capital structure has no significant effect on Return on Assets

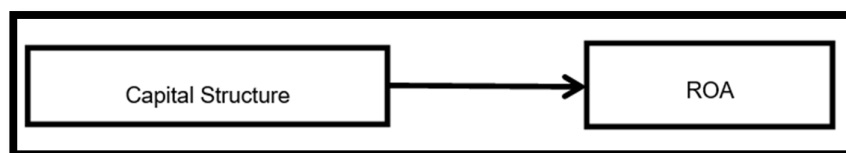


Figure 1: Conceptual Framework

2. Literature Review

Nirajini and Priya (2013) analyzed the impact of Capital structure on profitability during 2006-2010 (05 years) financial year among the 237 listed trading companies in Sri Lanka. They aimed to identify the nature of the relationship between debt and equity and the extent to which capital structure affects the company's profitability. They adopted the Modigliani-Miller Theory, trade-off theory and the agency cost theory. The seven-year data that were extracted from the annual reports of eleven sampled trading listed companies was analyzed using correlation and multiple regression techniques. The results revealed that there is a positive relationship between capital structure and profitability. Furthermore, the capital structure has a significant impact on the profitability of the firm where the debt-asset ratio, debt-equity ratio and long-term debt were correlated with gross profit margin (GPM), net profit margin (NPM), Return on Capital Employed (ROCE), Return on Asset (ROA) and Return on Equity (ROE).

A study by Kasozi (2009) examined the divide between finance theory and practice by analyzing the significance of the determinants of capital structure choice among 123 listed firms on the Johannesburg Stock Exchange (JSE). He aimed to determine whether these firms follow the trade-off theory or the pecking-order theory. Data obtained from McGregor's Bureau of Financial Analysis database was analyzed using standard multiple regressions, stepwise regressions and ANOVA techniques to test for financing behavior. The results revealed a significant positive correlation between debt financing and financial distress and a significant negative correlation between debt financing and the collateral value of assets during the period under study (1995-2005).

In the study done by Harvey and Graham (2001), they examined an international comparison of capital structure and debt maturity choices and the influence of institutions on capital structure and debt maturity choices in a cross-section of firms in 39 developed and developing countries. They found out that firms that choose to cross-list tend to use more equity and longer-term debt. They also found out that taxes and the characteristics of the financial institutions that supply capital have an influence on how firms are financed. Finally, they found that the cross-sectional determinants of leverage differ across countries. In particular, the relationship between profitability and leverage tends to be stronger in countries with weaker shareholder protection. On the other hand, Khan *et al.* (2013) examined the impact of capital structure and profitability on stock returns of Pakistan textile industry. They aimed at analyzing the impact of debt-to-equity ratio, profitability and earnings per share on stock returns. Data were extracted from the annual financial statements of 69 listed textile companies taken as a sample from 189 listed companies from 2003-2009. The analysis was done using an ordinary least square model, and the results showed that equity and earnings per share have a positive correlation with the stock return. Therefore, firms' profitability is judged by positive upward trends in their stock values only when markets operate in a normal way.

According to a study done by Mumtaz *et al.* (2013) on the relationship between the capital structure of a Pakistani firm and its profitability using debt-to-equity ratio as a measure of capital structure, and ratios like Earning per Share,

Price/Earnings Ratio, Operating profit Margin, Return on Asset, Return on equity as proxies for firm performance. They used 83 companies that were selected from KSE 100 index and the results indicated that the profitability of firms is significantly affected by their capital structure and their relationship is negative in nature. Moreover, the capital structure of a firm shows a negative relationship with its market value and increases its risk level as the share of debt increases in the capital mix. In addition, Zeitun and Tian (2007) find that capital structure has a significant and negative impact on a firm's performance and underestimation of bankruptcy costs may lead firms to borrow excessively and carry high debt in their capital structure. However, others find mixed results regarding the impact of capital structure on a firm's profitability (Ebaid, 2009). One such study testing the hypothesis that capital structure is one of the main determinants of firm performance explains that the tax benefit of debt financing leads firms to borrow excessively. In doing so, firms very often ignore the bankruptcy costs stemming from declining returns to excessive debt. Therefore, when profit-maximizing firms diverge from an appropriate capital structure, their bankruptcy or financing costs outweigh the tax benefits related to the trade-off between debt and equity.

The empirical evidence discussed above came out of research investigations that mainly reproduced the literature relating to developed economies and a few developing countries. Hence, the understanding of capital structure and the effect it has on the performance of tea processing firms can hardly be understated for a developing economy such as Kenya.

2.1. Traditional Theory

According to Mumtaz *et al.* (2013), this theory explains the level of capital structure and financial performance. Traditional theory was advocated by financial experts Solomon and Weston (1963). This traditional theory of capital structure pleads that the value of the firm increases to a certain level of debt capital and after that, it tends to remain constant with moderate use of debt capital, and finally, the value of the firm decreases. Thus, this theory holds the concept of optimal capital structure. According to this theory, a proper and right combination of debt and equity will always lead to market value enhancement of the firm. This approach accepts that the equity shareholders perceive financial risk and expect premiums for the risks undertaken. This theory also states that after a level of debt in the capital structure, the cost of equity capital increases. The reason is that debt involves lower costs and is a cheaper source of finance when compared to equity. The increase in specific costs, as well as the debt-equity ratio, has not offset the advantages involved in raising capital from a cheaper source, namely debt.

3. Research Methodology

This study employed a causal effect type of research design whereby the capital structure variables' effect on the financial performance indicator of Return on Assets was investigated. The research was undertaken within Region Five Factories of Kenya Tea Development Agency. Region Five encompasses factories mainly in Bomet and Kericho counties, an area that is known for its high productivity when it comes to tea production. The study area had a total of twelve tea manufacturing factories. However, data was collected from nine factories since three of the factories had not been in existence for more than five years. Since the population of the study was small, a census sampling method was used to contact all the nine KTDA tea processing factories in Kericho and Bomet Counties that have been in existence for more than five years. This is because a five-year period is enough for the capital structures of any organization to have stabilized and its influence seen on performance trends. The study used secondary data for the period 2008 to 2013 that were obtained from the audited financial reports. To ensure validity, the financial statements that were used were prepared according to the International Financial Reporting Standards (IFRS). Cronbach alpha was used to test for reliability, which gave a result of 0.67, hence ensuring that the methods used were reliable.

Data were analyzed using panel regression analysis to determine the effects of capital structure on the ROA. Panel data analysis has been used widely in recent empirical studies that seek to address various challenges in economic development and policy analysis (Biwott, 2011; Githuku, 2010; Thairu, 2010; Hsiao, 2007). This is because it provides a rich environment for the development of estimation techniques and theoretical results.

Based on the reviewed literature, this study assumed that four variables affect the performance of tea processing factories in Kenya. This includes firm-level leverage, which was computed as: SDTA (Short-term debt / total assets), LDTA (Long-term debt / total assets), TDTA (Total debt / total assets), and TDTQ (Total debt / total equity). Empirically, taking the above factors into consideration, the panel fixed effect regression model in this study follows the works of San and Heng (2011), Saeedi and Mahmoodi (2011), Thairu (2010), and Hsiao (2007) where the model assumed a lagged form and is specified as:

$$F_{it}^p = \beta_1 + \beta_2 SDTA_{it-1} + \beta_3 LDTA_{it-1} + \beta_4 TDTA_{it-1} + \beta_5 TDTQ_{it-1} + \varepsilon_{it-1}$$

Where:

F_{it}^p = Tea processing factories performance level measured by ROA.

$SDTA_{it-1}$ = Short-term debt per total assets.

$LDTA_{it-1}$ = Long-term debt per total assets.

$TDTA_{it-1}$ = Total debt per total assets.

$TDTQ_{it-1}$ = Total debt per total equity

ε_{it-1} = Regression disturbance term

4. Analysis and Findings

4.1. Effects of Capital Structure on ROA of Tea Processing Factories

The study sought to determine the effects of tea processing capital structure on ROA as a financial performance indicator. Since panel data was used, the study performed a Durbin-Wu-Hausman (DWH) test in order to determine whether the estimates of the coefficients, taken as a group, are significantly different in the two regressions (fixed or random) and select the one to be adopted using the two methods. In the first case, the data were balanced and the results of the DWH test suggest that a fixed effect exists between the tea factories of the data; hence, the panel Fixed Effect Model (FEM) was adopted since its results were significant as indicated by the P-value of 0.0391 for DWH test for ROA with efficient and consistency estimates. Therefore, the null hypothesis is rejected and the research adopts the alternate hypothesis that capital structure has a significant impact on ROA at $P=0.0391$, which is less than .05 level of significance.

The variables that were perceived in chapter three to affect the performance of tea processing factories in Kericho and Bomet counties were estimated using a panel fixed effects regression model (Table 1). The result indicates that short-term debt and long-term debt were significant at .05% and .01%, respectively. On the contrary, the total debt and the actual capital structure were found in this study to be insignificant, though with positive and negative influences on the tea processing factories, respectively. This, therefore, conforms to prior expectations. The result further indicates that short-term debt was significant with negative effects on the Return on Assets of the tea processing factories in the study area. This implies that an increase in short-term debts decreases the probability of the tea factory performing better in its activities and hence jeopardizes the future prospects of the factory. This implies that these tea factories in the study area, in general, finance their assets by debts, especially short-term debts. This means they operate in a risky manner. The findings of this study are consistent with the findings of Saeedi and Mahmoodi (2011), Chakraborty (2010), and Karadeniz *et al.* (2009), who reported a negative relationship between firm performance and short-term debt.

In terms of the long-term debt of the tea factories in the study area, the results indicate that there is a positive effect and hence, an increase in the long-term debts increases the probability of the tea factory performing better in its activities and hence maximizes its output. This implies that the larger the long-term capital structures of a firm, the better the chances to reap from various long-term investments as they improve on their financial performance. The findings of this study concur with the conclusions of Frank and Goyal (2003), who found out a positive relationship between long-term debt and firm performance. On the other hand, these findings disagree with the findings of Abor (2007), Zeitun and Tian (2007), and Rajan and Zingales (1995), who indicated a negative relationship between firm performance and long-term debt.

Variables	Coefficient	Standard Error	P-value
Short-term debt per total assets	-856.5408	608.4229	0.039**
Long-term debt per total assets	0.0601371	0.0172927	0.002*
Total debt per total assets	128.4747	91.26395	0.169
Total debt per total equity	-0.0709123	0.0442037	0.119
Constant term	0.2434264	0.0639013	0.001
Diagnostic Statistics			
Corr (u _i , x _b)	-0.0473		
Sigma _u	0.04822		
Sigma _e	0.10198		
Rho	0.18273		
Number of Observations	44		
Number of groups	9		
F(4,31)	3.31		
Prob > chi2	0.0007		

Table 1: Summary of the Effects of Capital Structure on Return on Assets of Tea Factories
* ($P < 0.01$) ** ($P < 0.05$), Summarized from Computer Output (STATA), (Appendix I)

4.2. Summary

This study sought to establish the effects of capital structure on the performance (ROA) of tea processing factories in Kericho and Bomet counties in order to offer some insights in Kenya based on the data that was obtained from KTDA for the nine tea processing factories for the five-year period between 2008-2013. The results indicated that short-term debt was significant at 5% while long-term debt was significant at 1%. However, the total debt and the actual capital structure were found in this study to be insignificant, though with positive and negative influences on the tea processing factories, respectively.

The results established that short-term debt was significant with negative effects on the Return on Assets of the tea processing factories in the study area. The implication is that increasing the use of short-term debt does not lead to financial performance, therefore jeopardizing the future prospects of the firm. This means that the use of short-term debt is risky for the firm. In terms of long-term debt, the study established that there is a positive effect on the financial performance of the tea processing factories. Therefore, a firm would maximize its output through the use of long-term debt. The larger the long-term capital, the better the chances for the tea processing factories to reap benefits from long-term investments.

5. Recommendation

The study result shows that, for intervention in tea processing factories' performance in terms of financial performance levels and/or trends, the long-term debt and total debt are important factors since they lead to better performance. On the other hand, critical considerations need to be made while dealing with short-term debt in any tea processing factory, as it is negatively related to the financial performance of the tea factories. Therefore, based on these results, the study recommends that the tea processing factories must consider using an optimal capital structure since it is the "best" debt/equity ratio for the firm, which, in turn, will minimize the cost of capital and hence the cost of financing the tea processing operations.

Given that the current study was limited to the sample from KTDA region five tea factories and therefore, further research should be carried out to establish the determinants of tea processing factories' financial performance over given time periods. This would help to establish the extent to which different factors affect the performance of firms.

6. References

- i. Abor, J. (2007). Debt policy and performance of SMEs: evidence from Ghanaian and South Africa firms. *Journal of Risk Finance*, 8, 364–379.
- ii. Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 7(1), 99–120.
- iii. Biwott, P. K., (2011). International Trade Liberalization and Economic Growth: The Role of Regulatory Policies. Kenya Institute for Public Policy Research and Analysis (KIPPRA) DP/125/2011.
- iv. Chakraborty, I. (2010). Capital structure in an emerging stock market: The case of India. *Research in International Business and Finance*, 24, 295–314.
- v. Damodaran, A. (2001). *Corporate Finance: Theory and Practice*, 2nd edition, Wiley.
- vi. Frank, M. & Goyal, V. (2003). Testing the pecking order theory of capital structure. *Journal of Financial Economics*, 67, 217–48.
- vii. Githuku, S. (2010). Effects of Regional Trade Arrangements on Kenya's Export Flows. Kenya Institute for Public Policy Research and Analysis (KIPPRA) DP/113/2010.
- viii. Gleason, K. C., Mathur L. K. and Mathur I. (2000). The interrelationship between cultures, capital structure, and performance: Evidence from European retailers. *Journals of Business Research*, 50, 185–91.
- ix. Graen, G. B., & Scandura, T. A. (1987). Toward a psychology of dyadic organizing. In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior* (Vol. 9, pp. 175–208). Greenwich, CT: JAI Press.
- x. Gulati, R., Nohria, N. and Zaheer, A. (2000). Strategic Networks. *Strategic Management Journal*, 21(3), 203–215.
- xi. Harvey, C. R. & Graham, J. R. (2001). The theory and practice of Corporate Finance: Evidence from the Field. *Journal of Financial Economics*, 60, 187–243.
- xii. Hsiao, (2007). Panel Data Analysis – Advantages and Challenges. *Institute of Economic Policy/ Research (IEPR) working paper*, 06/49, 1–22.
- xiii. Karadeniz, E., Kandir, S.Y., Balcilar, M. and Onal, Y.B. (2009). Determinants of capital structure: evidence from Turkish lodging companies. *International Journal of Contemporary Hospitality Management* 21(5), 594–609.
- xiv. Khan, W., Naz, A., Khan, M., Khan, W. K. Q., & Ahmad, S. (2013). The impact of capital structure and financial performance on stock returns, A case of Pakistan textile industry. *Middle-East Journal of Scientific Research*, 16(2), 289–295.
- xv. Mumtaz, R., Rauf, S. A., Bashir, A., & Noreen, U. (2013). Capital structure and financial performance: Evidence from Pakistan (Kse 100 Index). *Journal of Basic and Applied Scientific Research*, 3(4), 113–119.
- xvi. Nirajini, A., & Priya, K. B. (2013). Impact of capital structure on financial performance of the listed trading companies in Sri Lanka. *International Journal of Scientific and Research Publications*, 3(5), 1–9.
- xvii. Rajan, R. G. & Zingales, L. (1995). What Do We Know about Capital Structure? Some Evidence from International Data. *Journal of Finance*, 50, 5, 1421–1460.
- xviii. Saeedi, A. & Mahmoodi, I. (2011). Capital Structure and Firm Performance: Evidence from Iranian Companies. *International Research Journal of Finance and Economics*.
- xix. San, O. T. and Heng T. B., (2011). Capital Structure and Corporate Performance of Malaysian Construction Sector. *International Journal of Humanities and Social Science* 1(2), 28–36.
- xx. Kasozi, S. J. (2009). *The capital structure practices of listed firms in South Africa* (Doctoral dissertation).
- xxi. Thairu, N. K. (2010). Agricultural production and Irrigation Management. The case of irrigated rice production in Kenya. Unpublished Master's Thesis at international institute for social sciences, Netherlands.
- xxii. Waring, A. (1996). *Safety management systems*. Wadsworth Publishing Company.
- xxiii. Zeitun, R. and Tian, G. G. (2007). Capital Structure and Corporate Performance: Evidence from Jordan. *Australasian Accounting Business and Finance Journal*, 1(4), 40–61.