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Effect Of Funding Structure And Liquidity On The Financial Performance Of The Sugar Industry In Kenya

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Abstract:
The main aim of this study was to determine the effect of funding structure on the financial performance of the sugar industry in Kenya. The relationship between funding structure and financial performance is crucial within Kenya's sugar industry, as it directly impacts resource allocation, expense management, and overall profitability. Inadequate financial management can result in liquidity challenges, affecting the sector's competitiveness and sustainability. Conversely, a well-balanced funding structure, incorporating both debt and equity, has the potential to strengthen financial stability. Stockholder, Trade-offs, and Pecking order guided the study. The study employed a correlational research design. The study's target population consisted of 16 sugar companies operational in Kenya. Purposive sampling was used to select 9 sugar companies. A total of 324 secondary data points from 2014 to 2022 were collected, including the cost of equity, debt, retained earnings, and economic value added, derived from financial statements and cash flows. The results showed a significant positive relationship between funding structure and Economic value added (coeff=0.863126, p=0.000<0.005). This reveals that Companies that maintain an appropriate funding structure are more likely to achieve higher Economic Value Added (EVA) over the long run. Given the positive long-term correlation between funding structure and EVA, it can be inferred that Kenyan sugar companies should prioritize maintaining a balanced funding structure to improve financial performance. The study concludes that funding structure has a significant relationship with economic value added.

Keywords: *Financial Performance, Funding Structure, Economic Value Added, Sugar Industry*

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I. Introduction

The evolution of Kenya's sugar industry performance has been influenced by a myriad of structural, policy, and economic factors. Historically, this industry has been pivotal in sustaining livelihoods and fostering rural development as an integral component of the nation's agricultural sector. Nevertheless, it has grappled with impediments such as low-cost import competition, obsolete infrastructure, inefficiencies, and elevated production costs. Performance, measured by financial and non-financial metrics, reflects goal attainment (Lebans & Euske, 2006). Financial performance, as defined by Mishra, Wilson, and Williams (2009), assesses a firm's income generation and asset utilization from core operations. Key indicators for the sugar industry's financial health include cost structure, profitability ratios, revenue, debt, liquidity, and market trends (Sugar Industry Stakeholders Task Force Report, 2019). A company's capital structure encompasses its mix of debt, equity, and other securities (Berk, & Demarzo, 2007). Optimal capital structure minimizes the weighted average cost of capital, enhancing firm value (Primis & Whitehurst, 2010). According to Huang and Thi (2002), capital sources include retained earnings, new stock issues, and debt capital.

The global sugar industry employs over 100 million people, with major producers including Brazil, India, and Thailand (Global Market Report Sugar, 2019). In Africa, Egypt and South Africa lead production, contributing 40% of the continent's output (Kenya Association of Manufacturers, 2020). Kenya's sugar industry began in 1902, with significant production in counties like Kakamega, Kisumu, and Bungoma (Sugar Industry Stakeholders Task Force Report, 2019). Despite contributing significantly to the economy and supporting 8 million livelihoods, the industry faces challenges such as high debt, inefficiency, and competition from imports (Kenya Sugar Directorate, 2021). From 2014 to 2021, Kenya's sugar industry saw fluctuations in area harvested, total production, and yield (KNBS Economic Survey, 2019-2022). The sector plays a crucial role in food security, employment, and regional development, aligning with Kenya's Big 4 Agenda and Vision 2030. Despite government interventions, the industry struggles with financial instability, high production costs, and aging infrastructure (Kenya Association of Manufacturers, 2020). The annual demand for refined sugar surpasses local production, necessitating imports. Maintaining a balanced funding structure is crucial for

enhancing the financial performance of Kenya's sugar industry. The findings provide valuable insights for stakeholders, emphasizing the need for strategic financial management to sustain the industry's growth and stability.

Table 1.1: Performance of Kenya's Sugar Industry (2014-2021)

Year	Area under cane (000Ha)	Area harvested (000Ha)	Total production (000 tonnes)	Average yield (tonnes/Ha)	Average yield (Ksh000)
2014	211.3	72.2	6409.9	61.4	6,385
2015	223.6	77.8	7164.8	66.4	6,905
2016	220.8	85.8	7151.7	62.2	6,468
2017	191.2	67.7	4751.	55.3	5,751
2018	202.4	73.1	5262.2	55.1	5,730
2019	197.3	71.9	4606.1	51.0	5,304
2020	200.5	89.8	6799.9	61.6	6,406
2021	223.0	92.4	7783.3	72.0	7,488

Source: KNBS Economic Survey (2019-2022).

Statement of the Problem

The sugar industry in Kenya is a vital component of the nation's economy, providing support for approximately 8 million people and providing 15% of the agriculture's contribution to GDP. Despite its significance, the sector grapples with financial instability, inefficiencies, and challenges posed by cheaper imports, resulting in many companies struggling due to inadequate working capital, liquidity, and substantial debts amounting to Kshs 58 billion by 2018. Annually, approximately 50% of sugar companies face financial distress, leading to closures. Effective liquidity management and an optimal funding structure, characterized by the appropriate mix of debt and equity, are imperative for ensuring financial stability. Nevertheless, many companies in the industry continue to encounter difficulties in these areas. Furthermore, there is a dearth of empirical research on the influence of funding structure and liquidity on the financial performance of the Kenyan sugar industry, leaving stakeholders with insufficient data to make well-informed decisions. This study seeks to address this gap by investigating how funding structure influences the financial performance of sugar companies in Kenya.

II. Literature Review

Theoretical Review

This study draws on three key theories: Stockholder Theory, Trade-off Theory, and Pecking Order Theory.

Stockholder Theory

Stockholder Theory, advocated by Milton Friedman (1962), emphasizes that the primary goal of corporations is to maximize shareholder value. Executives have a fiduciary duty to manage investor funds to achieve this objective, focusing on financial performance metrics such as return on equity, profitability, and return on assets. The theory also highlights the importance of sufficient liquidity to maintain operational efficiency and mitigate risks, thereby protecting shareholder interests.

Trade-off Theory

The Trade-off Theory, proposed by Modigliani and Miller (1958), suggests that companies optimize their capital structure by balancing the costs and benefits of debt and equity. The static trade-off theory posits that firms should use a mix of debt and equity to minimize the average cost of capital and maximize market value. This theory is particularly relevant to industries with tangible assets, like the sugar industry, which may prefer debt financing due to the collateral value of their assets. The study applies this theory to analyze how the combination of debt, equity, and retained earnings affects the financial performance of Kenya's sugar sector.

Pecking Order Theory

The Pecking Order Theory, associated with Myers and Majluf (1984), posits that companies prefer internal financing (retained earnings) over external financing (debt and equity). This preference is driven by a desire to retain ownership and reduce information asymmetry. The theory suggests that highly profitable firms need less external funding. The study explores whether Kenya's sugar industry follows this hierarchical approach to financing and how it impacts financial performance.

Empirical Literature Review

Li, Niskanen, and Mervi (2019): This study examined the relationship between capital structure and firm performance in European SMEs, considering credit risk as a moderating factor. Using profit before taxes to total assets as a performance measure, the study found that leverage negatively affects performance for SMEs with low credit risk. Murtala, Lawal, Ibrahim, and Abdullahi (2018): Investigated the impact of capital structure on the return on capital employed in Nigerian construction companies. The study found a negative impact of capital structure on financial performance, with a focus on debt-to-equity ratio, firm size, and age as key variables. Waseemullah et al. (2020): Analyzed the profitability of family-run textile companies in Pakistan. The study revealed that while the debt-to-total assets ratio negatively affects profitability, long- term debt ratios showed a positive relationship with profitability. Cole, Ying, and Hemley (2015): Explored the relationship between capital structure and firm performance in the industry, energy, and healthcare sectors. The study concluded that capital structure negatively impacts operational returns across all sectors and influences profit margins in the energy and industrial sectors but not in healthcare. Nguyen, Dao, Bui, and Dang (2019): Focused on Vietnam's food and beverage industry, finding that debt ratios negatively impact return on assets (ROA) but positively relate to return on equity (ROE) and earnings per share (EPS). Mwangi and Birundu (2015): Examined the effect of capital structure on the financial performance of SMEs in Kenya's Thika Sub-County. The study found no significant impact of capital structure on financial performance, measured by return on assets. Ngure, Mtea, and Muema (2018): Investigated the financial performance of companies listed on the Nairobi Securities Exchange. The study found a significant relationship between equity financing, long-term debt, and financial performance, but an insignificant relationship between short-term debt and financial performance. Njagi, Kimani, and Kariuki (2017): Studied the financial performance of SMEs in Embu, Kenya, focusing on equity financing. The study found a positive correlation between financial performance and equity financing, measured by growth in sales, liquidity, profit margin, and return on assets

The empirical literature indicates varied impacts of capital structure on firm performance across different sectors and regions. Key findings suggest that while leverage often negatively affects performance, the relationship can be influenced by factors like credit risk, debt maturity, and industry specifics. Understanding these dynamics is crucial for optimizing capital structure and enhancing financial performance in the sugar industry and beyond.

III. Methodology

Research Design

The research adopted a correlational research design, a non-experimental quantitative approach situated within the post-positivist paradigm (Asamoah, 2014). Correlational research is employed to investigate the relationships between variables and comprehend their interactions and influences. This approach is well-suited for scrutinizing the correlation between funding structure components (debt, equity, retained earnings) and financial performance metrics (Economic Value Added) in sugar companies. The study encompassed 16 sugar factories in Kenya, as per the Kenya National Bureau of Statistics Economic Survey 2020. Through purposive sampling, nine sugar factories provided quarterly data from 2014 to 2022, resulting in 324 observation points. Secondary data were gathered from financial statements, including income statements, balance sheets, and cash flow statements. The Auto Regressive Distributed Lag (ARDL) model was employed for data analysis. Panel ARDL models enable the examination of short-term and long-term relationships across different groups, capturing temporal dynamics and individual heterogeneity (Pesaran, Shin, & Smith, 2001). This model can handle variables integrated into different orders I (0), I (1), or cointegrated, and includes an error correction term to estimate both short-term dynamics and long-term equilibrium relationships. Below is a generalized ARDL regression model that was utilized.

$$yit = \sum p$$

$$\delta ijyi,t-j + \sum q$$

$$\beta ijXi,t-j + \varphi i + \varepsilon it$$

(1)

Where;

yit is the dependent variable,

Xit is a k*1 vector that are allowed to be purely I(0) or I(1) or cointegrated, δij is the coefficients of the lagged dependent variable called scalars; βij are k*1 coefficient vectors; φi is the unit specific fixed effects; I =1,2,……N; t=1,2… ,T. p,q,q are optimal lag orders,

εit is the error term.
The re-parameterized ARDL (p, q, q……q) error correction model is specified as
$\Delta yi,t = \theta i(yi,t-1 - \mu iX) + \sum p-1\ \alpha i,j\ \ \Delta yi,t-j + \sum q-1\ \beta ij\Delta Xi,t-j + \varphi i + \varepsilon it$ (2)
i,t
j=1
j=0

θi =-(1-δ1), group-specific speed of adjustment coefficient (expected that θi< 0); μi= vector of long-run relationship, ECT= ($yi,t-1 - \mu iXit$), the error correction term; αij βij are the short-run dynamic coefficients.

It is the error correction model that is important to run a panel ARDL. From the generalized model, this study model will take the following form., (1.1)
When Eq (1.1) is log linearized, we have the following (2.1)

Financial performance is a function of funding structure, liquidity, and the interaction of funding structure and liquidity.
Where; Fp= Financial performance
Fs= Funding structure Lq= Liquidity
Fs x Lq = interaction variable (funding structure and liquidity) In = natural logs

I = 1, 2……N; denotes the industries in our sample being equal to 9. t = 1, 2……, T; indicates the period in this case 9 years
The model estimated has the form of an ARDL (p, q, q… , q).
$\Delta InFPit = \theta i\ (FPi,t-1 - \mathrm{P}i,Xi,t) + \sum p-1\ \beta ij\Delta InFPi,t-j + \sum q-1\ \alpha ij\Delta InFSi,t-j + j$=1 j=0
$\sum q-2\ \mu ij\Delta InLqi,t-j + \sum q-3\ \delta ij\Delta In\ FSi,t-j * InLqi,t-j + \omega i + \varepsilon i,t$ 3.1
j=0

Where;
j=0
θi = − (1 − δ), group-specific speed of adjustment coefficient (expected that θi < 0)
Pi = vector of long-run relationship.
ECT = (($FPi,t-1 - \mathrm{P}iXit$), the error correction term.
$\beta\ ij\ ,\alpha ij,\mu ij,\delta ij$ are the short-run dynamic coefficients
ωi = group-specific fixed effects error term
εit = error term

IV. Result And Discussion

The study's objective was to analyze the impact of funding structure on the financial performance of Kenya's sugar industry. To achieve this, it relied on secondary data obtained from the sugar industry's financial statements, encompassing metrics such as the cost of debt, cost of equity, retained earnings, and economic value added. The process of data standardization entailed converting the original raw data into their natural logarithms. This transformation was implemented to optimize the data for statistical analysis by normalizing it. Standardizing the data into a consistent range can help alleviate bias in models that are sensitive to variable scale variations. Additionally, it assists in mitigating the impact of outliers, which are extreme values that have the potential to distort statistical measurements and model parameters. The utilization of techniques such as log transformation to standardize the data can lead to a reduced likelihood of encountering outliers. The study employed the Autoregressive Distributed Lag (ARDL) model for data analysis. This model exhibits versatility in managing variables integrated into different orders I (0), I (1), or a combination, selecting lag lengths, addressing non-stationarity, capturing short- and long-term dynamics, controlling for endogeneity, conducting cointegration analysis, and providing robust forecasting capabilities (Pesaran, Shin, and Smith, 2001). Such attributes render the ARDL model particularly valuable in empirical research scenarios where ensuring stationary variables can be challenging. Furthermore, the error correction term in the Panel ARDL model aids in estimating long-term equilibrium relationships and short-term dynamics, offering insights into the speed at which variables return to equilibrium following a short-term disturbance.

Funding structure and financial performance

Dependent Variable: D(INEVA)
Method: ARDL
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): INFS
Fixed regressors: C
Selected Model: ARDL (2, 3)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
		Long Run Equation		
INFS	0.863126	0.096242	8.968239	0.0000
		Short Run Equation		
COINTEQ01	-0.645118	0.142408	-4.530058	0.0000
D (INEVA (-1))	-0.012513	0.131906	-0.094865	0.9245
D(INFS)	0.005654	0.435266	0.012989	0.9896
D (INFS (-1))	-0.923272	0.410332	-2.250059	0.0253
D (INFS (-2))	0.476452	0.449466	1.060041	0.2901
C	0.022965	0.004592	5.000648	0.0000
Mean dependent var	6.12E-05	S.D. dependent var		0.067014
S.E. of regression	0.044481	Akaike info criterion		-3.607995
Sum squared resid	0.532221	Schwarz criterion		-2.966202
Log likelihood	639.4952	Hannan-Quinn criter.		-3.351827

*Note: p-values and any subsequent tests do not account for model selection.

The findings revealed a statistically significant positive association between funding structure (comprising debt, equity, and retained earnings) and Economic Value Added (EVA) over the long term. The estimated coefficient is 0.863126 with a p-value of 0.0000. Furthermore, a substantial and negative error correction term (-0.645118) indicates the presence of a long-term relationship, signifying that 64.5% of adjustments transition from the short run to the long run. Nevertheless, alterations in the funding structure did not exhibit significant short-term impacts on EVA. It is evident that companies derive benefits from maintaining a balanced mix of debt, equity, and retained earnings to create long-term value. These findings are consistent with the conclusions drawn in studies by Rufus and Ofoegbu (2015), Asad et al. (2019), and Barakat (2014), all of which established a positive correlation between capital structure and financial performance. However, the results diverge from those reported by Cole et al. (2015) and Mohammadzadeh (2011), who identified a negative relationship across various sectors and regions.

V. Conclusion And Recommendations

The study concludes that funding structure has a significant positive relationship with economic value-added and that the findings presented in this study offer valuable insights for financial managers operating within the sugar industry in Kenya and analogous contexts. These insights serve as a guide for devising optimal financing strategies aimed at enhancing Economic Value Added (EVA). The research suggests a prioritization of debt and equity over retained earnings as a means to bolster financial performance, underlining the importance of comprehending the impact of various financing sources on EVA. Armed with this knowledge, managers can make more astute decisions regarding capital allocation, ultimately working to maximize shareholder value. Furthermore, companies can formulate policies that promote the prudent utilization of debt and equity issuance.

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