

Towards Share Price Volatility: Does Capital Structure Choices Really Matter?

Erick Lusekelo Mwambuli*¹ & Victoria Kimani²

¹Accounting and Finance Department, Institute of Finance Management (IFM), Tanzania

²Diamond Trust Bank, Tanzania.

*Correspondence Email: ifmmwambuli@gmail.com

Abstract

The study was conducted to assess the impact of capital structure on the share price volatility in Tanzania. The study utilized quantitative secondary data spanning a ten (10) year period from 2013 to 2022, sourced from the Dar es Salaam Stock Exchange (DSE) and annual reports of six (6) chosen manufacturing companies. The data was analysed using the random effect panel regression model. Findings revealed that all independent variables (Short term, long term and total debt) have a negative statistically significant effect on share price volatility. On the basis of the study's findings, the research suggested that, listed companies should adopt effective debt management strategy to mitigate share price volatility. Also, Capital market and security authorities (CMSA) are advised to provide regulatory guidance and enforce transparent reporting requirements for listed companies. Furthermore, Investors are encouraged to adopt a strategic investment approach, considering companies with effective debt management in their decisions. Future researches should use Autoregressive Distributed Lag (ARDL) model to capture both short- and long-term impact of capital structure changes, and include additional debt related metrics and microeconomic factors for a more nuanced understanding of share price volatility.

Keywords: Share Price Volatility, Short Term Debt, Long Term Debt, Total Debt, Dar es salaam Stock Exchange

JEL Classification: H63, R53

1. Introduction

Capital structure, which is the mix of a company's financial securities such as debt and equity, represents how a company chooses to fund its assets and operations (Ahmed & Hla, 2019). One of the critical objectives of a firm is to maximize shareholder wealth, often measured by the fluctuations in the company's share price. Therefore, understanding the relationship between capital structure and share price volatility is significant as it serves as a primary indicator of value creation (Bui et al., 2023). Volatility refers to the degree of uncertainty or risk associated with the size of changes in a stock's value; higher volatility indicates that a stock's value can vary widely, while lower volatility suggests more stability (Lotto, 2021). Achieving an optimal capital structure that maximizes wealth through volatility involves strategically balancing various sources of financing (Karimi, 2020).

The relationship between capital structure and share price volatility has been extensively debated in financial literature. Modigliani and Miller (MM) were pioneers in this field, and their propositions laid the foundation for understanding the impact of capital structure on a firm's value and share price (Brusov et al., 2022). Modigliani and Miller's Propositions (MM I and MM II) initially suggested that, under certain assumptions, a firm's capital structure does not affect its overall value in a perfect capital market (Brusov et al., 2021). Specifically, MM I posited that, in the absence of taxes and bankruptcy costs, a firm's value is determined solely by its operating cash flows and the risk of its assets, irrespective of how those assets are financed. However, these propositions faced criticism for their unrealistic assumptions, such as the absence of taxes and bankruptcy costs (Dotsis & Loizos, 2023).

The introduction of taxes led to the development of MM Proposition II with taxes (MM II), which recognized the potential impact of taxes on a firm's value. According to MM II, the value of a leveraged firm could be higher than that of an unleveraged firm due to the tax shield on interest payments (Brusov & Filatova, 2023). The inclusion of tax implications expanded the discussion, highlighting the trade-off between the benefits of debt (tax shield) and the costs (financial distress and bankruptcy costs).

Signalling theory, as introduced by Ross (1977), offers another perspective on how managers strategically manipulate their capital structure to convey valuable information to the market. This theory posits that specific choices in capital structure can serve as intentional signals of a company's confidence in its future performance, with investors interpreting these choices as indicative of the company's prospects (Yasar et al., 2020). For instance, the issuance of additional equity by a company might be construed as a signal that the management perceives the stock to be overvalued. Such a signal could lead to a subsequent decrease in the stock price (Ferdous, 2019). On the flip side, the utilization of debt can also function as a strategic signal under this theory. An increase in debt capital, particularly at favourable interest rates, communicates that the company is not only creditworthy but also well-positioned to pursue growth opportunities, serving as a positive signal (Sari & Sedana, 2020). Conversely, if a company is compelled to reduce its debt or resorts to an equity offering, investors may interpret this as a negative signal. In essence, the signalling theory of capital structure posits that the market tends to react positively to debt issuances, viewing them as favourable indicators, while reacting negatively to equity issuances (Dignath et al., 2020). This nuanced approach to financing decisions underscores the intricate interplay between managerial strategies and market perceptions, shaping the narrative of a company's future outlook.

Despite theoretical acknowledgment, there is a noticeable lack of research focusing on the determinants of share price volatility in relation to capital structure within the Tanzanian context. Lotto (2021) conducted a study on the impact of dividend policy on stock price volatility among industrial firms listed on the Dar es Salaam Stock Exchange from 2009 to 2019. While this research provided valuable insights into the relationship between dividend policy and stock price volatility in Tanzania, the impact of capital structure on share price volatility remains underexplored. Given the inconsistent findings in support of theoretical perspectives and the scarcity of empirical studies in Tanzania, this study aims to assess the

impact of capital structure on share price volatility. Specifically, it considers short-term debt, long-term debt, and total debt as independent variables to guide its specific objectives.

This paper is structured into several sections. Section 1 introduces the study. Section 2 provides a review of the literature and the development of hypotheses, examining empirical evidence on the impact of capital structure on share price volatility. Section 3 outlines the methodology employed for data collection and analysis. Section 4 presents the findings and discusses the results. Finally, Section 5 offers the study's conclusions and recommendations.

2. Literature Review

The idea that capital structure influences stock price volatility originates from Modigliani and Miller's Capital Structure Theories, particularly MM II (1963). This theory is based on the presence of taxation, financial distress costs, and imperfect capital markets, suggesting an optimal capital structure. According to MM II, incorporating debt into the capital structure initially reduces the cost of capital due to tax benefits, reaching an optimal point. However, increasing debt beyond this point raises financial risk and the cost of capital, ultimately reducing the firm's overall value. This implies an inverse relationship between capital structure and the firm's value, as reflected in share prices.

In contrast, Signalling Theory, introduced by Ross (1977), suggests that managers use their capital structure to convey information to the market. In this framework, increasing debt is seen as a positive signal, indicating managerial confidence in future earnings. Empirical studies on these theories have yielded mixed results. For instance, Fiorenza et al. (2022) found a significant negative impact of dividend policy on share price volatility in service sector firms on the Indonesia Stock Exchange, with higher dividend payouts associated with lower share price volatility. Conversely, profitability had a significant positive effect, linking increased profitability to higher share price volatility. However, leverage, measured by the debt-to-equity ratio, had an insignificant effect on share price volatility.

Thomas and Ilat (2021) found that asset growth significantly increased stock price volatility for banking corporations on the Indonesia Stock Exchange, while debt solvency, measured by the debt-to-equity ratio, had no significant impact. Xiang et al. (2021) investigated the relationship between financing constraints and stock price volatility in A-share listed companies in Shanghai and Shenzhen, discovering that greater financing constraints led to lower stock price volatility. This indicates that companies facing higher financing constraints experience smaller stock price fluctuations, highlighting the role of financing constraints in influencing stock price volatility.

Sosa Castro and Arriaga Navarrete (2023) studied the impact of leverage on stock returns for Mexican listed firms, finding that leverage, including both short- and long-term debt, had a significant negative effect on stock returns. The relationship was non-linear, with a more pronounced impact on highly leveraged firms. Karimi (2020) observed a significant positive effect of financial leverage on the trend of stock price volatility for companies listed on the Tehran Stock Exchange. Similarly, El Alaoui et al. (2017) reported that leverage had a positive effect on stock price volatility for European firms, with highly leveraged firms showing greater volatility compared to low-leveraged firms. The relationship between debt-

to-total assets and volatility was also non-linear, indicating a more significant effect on highly leveraged firms.

Bui et al. (2023) found that the debt ratio positively influenced Tobin's Q, suggesting a positive impact on firm value for companies listed on the Vietnamese stock market. Conversely, the long-term debt ratio did not have a significant effect on firm value. Vuong et al. (2023) observed a positive relationship between stock market volatility and both total market leverage and short-term market leverage, while long-term market leverage had a negative impact on stock market volatility for Chinese firms listed on the Shanghai Stock Exchange. Cheng et al. (2020) determined that using short-term debt for long-term investments (SDFLI) increased the risk of a stock price crash in China's stock market. Given these conflicting findings from previous empirical studies, the study developed and tested the following null hypotheses that *there is a negative relationship between short term debt and share price volatility; there is a negative relationship between long term debt and share price volatility; and there is a negative relationship between Total debt and share price volatility*

3. Methodology

The methodology section of the study includes the target population and sample size, sampling technique and criteria for sample selection, types of data and data sources, variable measurements, and model specifications. The study was conducted in Tanzania, focusing on companies listed on the Dar es Salaam Stock Exchange (DSE) within the industrial and allied sectors. The population for the study comprised twenty-eight listed companies. From this population, a sample of six manufacturing companies—TCC, TBL, TATEPA, TOL, TCPL, and TPCC—was selected. The selection of these six companies was based on specific criteria. Firstly, all financial institutions, including banks and insurance companies, were excluded from the study because their capital structures are heavily regulated by central banks and insurance regulatory authorities. This regulation could skew the analysis of capital structure's impact on share price volatility. Secondly, commercial service companies such as Precision Air and Kenya Airways were excluded due to the unavailability of sufficient data. Consequently, the study focused exclusively on the six manufacturing companies that met the criteria and had the necessary data available for analysis.

Convenience sampling was used in the study to select 6 companies from the 28 publicly listed firms on the Dar es Salaam Stock Exchange (DSE). Convenience sampling was appropriate for the current study because it allowed for the selection of easily accessible and available listed companies from DSE, enabling the researchers to conduct their analysis efficiently within a limited timeframe and with available resources. This method facilitated the inclusion of relevant firms without the need for expensive and time-consuming sampling procedures, making it practical for the scope and objectives of the study. Additionally, convenience sampling provides a straightforward approach to gathering data from a subset of companies that were representative of the population under investigation, thereby yielding preliminary insights into the relationships between market capitalization, debt ratios, and firm size.

The study utilized quantitative secondary data spanning a 10-year period (2013-2022), sourced from the Dar es Salaam Stock Exchange (DSE) and annual reports of specifically chosen companies. Secondary data from annual reports for the period under review were selected because, these reports contain audited financial statements which are reliable. Furthermore, they provide key information which is relevant for our study. Also, DSE website used to collect share price movements information along with a thorough review of other research papers, journals and books.

The study was structured around both independent and dependent variables, as outlined in Table 1. Each variable was operationally defined to facilitate the analysis. The dependent variable is share price volatility, which is assessed using the standard deviation of share prices. This measurement considers the average of the highest and lowest prices. The independent variables include the short-term debt ratio, long-term debt ratio, and total debt ratio. The short-term debt ratio is defined as the proportion of current liabilities to total assets. The long-term debt ratio represents the proportion of long-term liabilities to total assets. The total debt ratio is the proportion of total liabilities to total assets. Firm size is included as a control variable and is measured by the natural logarithm of total assets.

Table 1 Study Variables Measurements

Variable	Nature	Measurement	References
Share price Volatility	Dependent	Standard Deviation (SD)= Share Price = (Highest Price + Lowest Price)/2	Dissanayake & Wickramasinghe, (2016)
Short term debt ratio	Independent	Current liabilities/Total assets	Mwambuli (2019)
Long term debt ratio	Independent	Long liabilities/Total assets	Mwambuli (2019)
Total debt ratio	Independent	Total liabilities/Total Assets	Mwambuli (2019)
Firm size	Control	Natural Logarithm of total assets.	Mwambuli (2019)

Source: Researcher (2024)

This study employed a random effects regression model, the decision to apply the random effects model was supported by the results of the Hausman Test, where the obtained P-value surpassed the significance threshold of 0.05. One notable advantage of employing the random effects model lies in its ability to effectively handle unobserved heterogeneity across individual units within the dataset. Unlike fixed effects models, which assume that each individual unit has a unique constant effect, random effects models recognize that these effects can vary randomly across units. This flexibility is particularly valuable when there are inherent differences among the units that are not explicitly measured in the dataset, allowing for a more realistic representation of the underlying data structure. Moreover, the random effects model is robust in the presence of time-invariant variables that may be correlated with the independent variables. This characteristic is crucial in addressing potential endogeneity concerns and enhancing the model's capacity to capture the true relationship between variables. In the context of the study, the decision to employ the generalized least squares (GLS) estimator further strengthened the analytical approach. This choice was driven by the acknowledgment of heteroskedasticity within the dataset, a condition where the variance of the errors is not constant across observations. By applying the GLS estimator, the study effectively accounted for and mitigated the impact of heteroskedasticity, ensuring more accurate and reliable parameter estimates. Thus, the study random effect model was specified as follows;

$$SPV_{it} = \beta_0 + \beta_1 STDR_{it} + \beta_2 LDR_{it} + \beta_3 TDR_{it} + \beta_4 SIZ_{it} + \gamma_i + \epsilon_{it} \dots\dots\dots 1$$

Where SPV represents Share Price Volatility, STDR represents the short-term debt ratio, LDR represents the long-term debt ratio, TDR represents the total debt ratio, and SIZ represents firm size. i represents the firm, t represents time, γ_i represents the firm-specific random effects, ϵ_{it} represents the error term. On the other hand, the study conducted a robust test to establish the stability of the random effects model in explaining the relationships between the dependent and independent variables by replacing Share Price Volatility with market capitalization. The random effects model was specified as follows:

$$MC_{it} = \beta_0 + \beta_1 STDR_{it} + \beta_2 LDR_{it} + \beta_3 TDR_{it} + \beta_4 SIZ_{it} + \gamma_i + \epsilon_{it} \dots\dots\dots 2$$

Where by MC represents Market Capitalization, STDR represents the short-term debt ratio, LDR represents the long-term debt ratio, TDR represents the total debt ratio, and SIZ represents firm size. i represents the firm, t represents time, γ_i represents the firm-specific random effects, ϵ_{it} represents the error term

4. Results

Two parts are the key entails of this section. The first part covers descriptive statistics, providing an overview of the data and summarizing the main features of the variables used in the study. The second part presents the regression results and discussions, where the relationships between the independent and dependent variables were analyzed and interpreted and linked with previous empirical studies.

Descriptive Result

On assessing the impact of capital structure on the share price volatility in Tanzania, A descriptive analysis was undertaken to offer a comprehensive overview of the study variables. The study findings in Table 2 reveal that, the mean share price volatility is TZS 4,484.05 with a substantial standard deviation of TZS 5,084. 97. This signifies a moderate level of fluctuations in stock prices of listed firms in the industry; however, this share price is still small as compared to other stock markets like US with an average of equivalent TZ 39,460, Bakhtiar *et al* (2022). This suggests that our Tanzania stock market is still developing and considerable dispersion in share price indicates potential market instability. The wide range between the maximum value of TZS 16,430.6 and the minimum value of TZS 200 in the dataset indicates a spectrum of volatility levels among the firms analyzed, which can be attributed to difference in firm's size and financial health. This broad range underscores the diverse risk profiles present in the sample, accommodating various investor preferences (risk lovers and risk averse) and strategies based on their risk tolerance and investment objectives. This is a good sign since it indicates the possibility of exploiting profits as recommended by Stambaugh and Yuan (2012).

The Short-term debt, characterized by a mean of 22.9%, represents the average proportion within the sampled firms which is higher than average long-term debt ratio (LTDR) of 13.7%. This implies that Tanzanian listed firms depend more on short term financing (like bank borrowings) than long term financing (like corporate bonds) this can be attributed to a less developed capital market in Tanzania. Examining the range of the Short-term debt variable, which spans from 3.3% to 53.7%, underscores considerable variability across the sampled firms. Notably, the minimum value of 3.3% signifies that some firms have minimal

reliance on short-term debt, potentially indicating strong liquidity positions or conservative financial management, while the maximum value of 53.7% indicates that some firms depend heavily on short-term debt, which could lead to liquidity issues if these obligations cannot be met promptly. The average of short-term debt fall with the optimal position since short term liabilities does not harness Tax advantages as recommended by Leland and Toft (1996). The study findings are also consistence with the study of Mwenda *et al* (2021).

The Long-term debt variable, with a mean of 13.7%, represents the average proportion of long-term debt to total assets within the sampled firms, which is lower than average short-term debt ratio (STDR) of 22.9% consistent with Mwenda *et al* (2021). This implies that Tanzanian listed firms depend more on short term financing like bank borrowings than long term financing (like corporate bonds) this can be attributed to a less developed capital market in Tanzania. This relatively low average suggests a cautious approach to long-term borrowing, possibly to avoid high interest obligations and ensure financial flexibility. Analyzing the range of the Long-term debt variable, from a minimum of 0.5% to a maximum of 47.2%, highlights substantial variability in the long-term debt practices across the sampled firms. The minimum value of 0.5% signifies that some firms have minimal reliance on long-term debt, potentially indicating strong liquidity positions or conservative financial management, while the maximum value of 47.2%, signifies the indicates that some firms depend heavily on long-term debt, which could lead to liquidity issues if these obligations cannot be met promptly. The average position of long-term debt is a good sign that, listed companies are not over indebted in their capital structure composition.

The Total debt variable, characterized by a mean of 36.6%, signifies that, on average, listed firms in Tanzania are operating on low levels of leverage because 36.6% is financed by debt while 63.4% is equity financing. This can be attributed to public awareness and participation on trading in Tanzania stock market in the recent years. The minimum value of 6.8% highlights that some firms have very low total debt, potentially relying more on equity financing, while the maximum value of 37%, signifies that some firms rely more on total debt as compared to others indicating a more aggressive leverage strategy. This variability in debt levels suggests different risk appetites and financial strategies among the firms, affecting their financial stability and capacity for growth. This also indicates a good sign since it demonstrates lower bankrupt cost. The current study findings are in line with the study of Chindengwike (2024).

Firm size, as measured by assets, offers crucial insights into the scale and magnitude of the sampled firms. The mean firm size, of TZS 447,650.3 million, signifies that the sample includes relatively large firms, which likely have substantial market influence and resources. This can be attributed to recent developments of the listed firms in the Tanzanian market. The maximum firm size of TZS 1,122,701 million indicates the presence of very large firms with extensive operations in terms of assets. The minimum firm size of TZS 17,827 million shows that smaller firms are also part of the sample, possibly with more limited resources but potentially higher growth opportunities. The wide range between the largest and smallest firms reflects a diverse sample in terms of market presence and operational scale, impacting their strategic decisions and market dynamics.

Table 2 Descriptive Analysis Results

Variables	Mean	Std. Dev.	Minimum	Maximum	Observations
Share Price Volatility	4484.055	5084.974	20	16430.6	60
Short Term Debt	0.229	0.102	0.033	0.537	60
Total Debt	0.366	0.165	0.068	0.37	60
Long Term Debt	0.137	0.113	0.005	0.472	60
Firm Size (Millions)	447,650.3	547513.5	547513.5	1,122,701	60

Source: Author's Computation (2024)

Regression Result

The study employed Random effect panel regression model in data analysis at 95% confidence interval and the results, detailed in Table 3, reveal a robust model fit, underscored by a high R-squared value of 0.935 and an adjusted R-squared of 0.931. These statistics imply that approximately 93.5% of the observed variability in Share Price Volatility is accounted for by the selected independent variables; Short term debt, Total debt, and Long-term debt, while controlling for Firm size. The robust model fit is also evident from the marginal difference between R-squared value of 0.935 and the adjusted R-squared of 0.931, suggesting stability in the model. In this case, the close alignment between R-squared and adjusted R-squared implies that the inclusion of the chosen variables, short-term debt, long-term debt, total-debt contributes significantly to the model without introducing unnecessary complexity. The low standard error of regression (0.129) signifies a precise estimation of the dependent variable as true representatives of the population. The highly significant F-statistic of 199.329, with a probability of 0.000, indicates the model's overall statistical significance. This suggests that at least one independent variable significantly influences the variability in Share price volatility. Additionally, the Durbin-Watson statistic of 0.467 indicates no apparent autocorrelation.

Table 3 Random Effect Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Short Term Debt	-0.6102	0.038	-16.267	0.000
Total Debt	-0.0768	0.037	-2.069	0.001
Long Term Debt	-0.3048	0.022	-14.166	0.000
Firm Size	0.0373	0.024	1.533	0.879
C	0.5080	0.238	2.131	0.038
Weighted Statistics				
R-squared	0.935	Mean dependent var		-0.601
Adjusted R-squared	0.931	S.D. dependent var		0.488
S.E. of regression	0.129	Sum squared resid		0.909
F-statistic	199.329	Durbin-Watson stat		0.467
Prob(F-statistic)	0.000			

Source: Author's Computation (2024)

Short Term Debt and Share Price Volatility

According to the results presented in Table 3 the short-term debt has a negative, but statistically significant effects on share price volatility in Tanzania. This implies that one percent increase of short-term debt appears to be linked with reduced share price volatility in the Tanzanian context. This implies that listed companies at DSE should carefully

consider their debt structures as a means of influencing and potentially minimizing share price fluctuations, which, in turn, have lower impact investor perceptions and confidence in the market. The study's findings are in line with the study of Sosa Castro and Arriaga Navarrete (2023), confirmed short-term debt, had a negative significant effect on volatility. Also, the study findings are contrary with the findings of Xiang *et al.* (2021), Cheng *et al.* (2020), Karimi (2020), El Alaoui *et al.* (2017), Bui *et al.* (2023) confirmed leverage had a positive effect on stock price volatility. The study's findings align with the principles of Modigliani-Miller Proposition MM II and Signalling Theory, shedding light on the theoretical implications of the negative but statistically significant impact of short-term debt on share price volatility in Tanzania.

Consistent with Modigliani-Miller Proposition MM II, the observed negative relationship between short-term debt and share price volatility supports the proposition that an increase in debt can lead to a decrease in the cost of capital until an optimal capital structure is achieved. The study suggests that effective management of short-term debt in the Tanzanian context may contribute to lowering overall share price volatility. Tanzanian companies, by strategically incorporating short-term debt, could be optimizing their capital structure to minimize the cost of capital, thereby enhancing firm value. Thus, the study's findings substantiate the anticipated negative relationship between debt and the firm's value, as reflected in share prices, as proposed by Modigliani-Miller Proposition MM II.

In the context of Signalling Theory, the study's results indicate that an increase in short-term debt is associated with reduced share price volatility, serving as a positive signal. In line with Signalling Theory, managers strategically use capital structure decisions to convey valuable information to the market. The decrease in volatility could be interpreted as a signal of managerial confidence in future earnings. The study implies that Tanzanian companies effectively managing short-term debt are signalling their capability to meet financial obligations and avoid potential bankruptcy, thereby instilling confidence in their financial stability and future prospects. Consequently, the study's observed negative relationship aligns with the expectations set forth by Signalling Theory, suggesting that Tanzanian companies strategically employ short-term debt to communicate confidence in their financial well-being and future performance. Therefore, there is a negative relationship between short term debt and share price volatility.

Long Term Debt and Share Price Volatility

According to the results presented in Table 3 the long-term debt has a negative, but statistically significant effects on share price volatility in Tanzania. This suggests that, one percent increase in long-term debt is associated with a reduction in share price volatility within the Tanzanian context. This implies that listed companies at DSE carefully consider the implications of long-term debt on value creation. The study findings are contrary with the study of Bui *et al.* (2023) confirmed the long-term debt ratio did not significantly affect volatility. The study's findings align with Modigliani-Miller Proposition MM II and Signaling theory, providing theoretical insights into the impact of long-term debt on share price volatility in Tanzania. According to Modigliani-Miller Proposition MM II, the study's observed negative relationship between long-term debt and share price volatility is consistent with the proposition that, in the presence of tax advantages associated with debt,

increasing the proportion of debt in the capital structure can lead to a decrease in the overall cost of capital until an optimal capital structure is reached. At this optimum, the firm's value is maximized. The negative effect on share price volatility suggests that Tanzanian listed companies may be strategically incorporating long-term debt to minimize the overall cost of capital and enhance firm value, indicating a potential move towards an optimal capital structure in the realm of Signaling Theory, the study's results align with the proposition that managers strategically use their knowledge of the company's value to communicate information to the market through financial decisions. Specifically, the observed reduction in share price volatility associated with an increase in long-term debt serves as a positive signal. This reduction in volatility can be interpreted as a manifestation of managerial confidence in future earnings. The commitment to debt payments indicates a belief in the company's ability to generate future cash flows, underscoring confidence in financial stability. Consequently, Tanzanian listed companies may be using long-term debt strategically as a positive signal to convey their confidence in future performance and financial well-being. Therefore, there is a negative relationship between long term debt and share price volatility

Total Debt and Share Price Volatility

According to the results presented in Table 3, the total debt has a negative, statistically significant effects on share price volatility in Tanzania, hence the study reject the null hypothesis. This suggests that one percent increase in short-term debt is associated with a reduction in share price volatility within the Tanzanian context. This implies that listed companies at DSE carefully consider the implications of total debt in their capital structure hence small volatility of the share price. The study findings are contrary to the study of Fiorenza *et al.* (2022), Thomas and Ilat (2021) total debt had no significant effect on stock price volatility. Also, the study findings are contrary with the study of Bui *et al.* (2023) which confirmed that the debt ratio positively influenced volatility.

The study's findings, indicating a negative but statistically significant effect of total debt on share price volatility in Tanzania, align with the theoretical underpinnings of Modigliani-Miller Proposition MM II and Signaling Theory. According to Modigliani-Miller Proposition MM II, an optimal capital structure exists where the overall cost of capital is minimized and the firm's value is maximized.

In the context of Signaling Theory, the study's results suggest that total debt is associated with a reduction in share price volatility, serving as a potential positive signal. Signaling Theory proposes that managers strategically use capital structure decisions to communicate valuable information to the market. The decrease in volatility could be interpreted as a signal of managerial confidence in future earnings. The study implies that Tanzanian listed companies, by effectively managing their total debt, are signaling their capability to meet financial obligations and avoid potential bankruptcy. This aligns with the expectations of Signaling Theory, indicating that Tanzanian companies may use total debt strategically to communicate confidence in their financial stability and future performance, resulting in lower share price volatility. Therefore, there is a negative relationship between Total debt and share price volatility.

Robustness Test

To establish the robustness of the original model results, the study conducted robust tests by examining how changes in the input parameters or assumptions affect the study's outcomes. To achieve this, the study replaced the parameter of share price volatility with market capitalization. The findings presented in Table 4 indicate consistent results, with all variables exhibiting similar outcomes despite being slightly lower than those in the original model. Therefore, it can be concluded that the random effects model is appropriate for providing reliable results on the influence of capital structure composition on share price volatility in Tanzania.

Table 4: Robust Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Short Term Debt	-0.430	0.141	-3.043	0.000
Total Debt	-0.107	0.052	-2.058	0.000
Long Term Debt	-0.210	0.095	-2.211	0.000
Firm Size	0.021	0.110	0.188	0.417
C	0.865	3.096	2.806	0.001

Source: Author's Computation (2024)

5. Conclusions and Recommendations

The relationship between a company's capital structure and share price volatility is a crucial topic in finance. A firm's capital structure, which includes debt, equity, and retained earnings, significantly impacts its financial health and risk profile. This study examined how capital structure affects share price volatility in Tanzania, focusing on short-term debt, long-term debt, and total debt. The results showed that lower levels of short-term and long-term debt are linked to reduced share price volatility. These findings highlight the importance of careful debt management in maintaining financial stability. For investors, this means considering debt levels when making decisions, as higher debt can lead to increased volatility. Listed companies should aim for a balanced and sustainable debt structure to enhance shareholder value and investor confidence. Policy implications of the study findings dwell on the development of guidelines for optimal capital structures for listed companies to promote value creation. Regulatory frameworks can influence companies to adopt capital structures aligned with value creation objectives, contributing to a more robust financial environment. Listed companies are advised to reassess and potentially revise their capital structure policies to achieve an optimal balance of long-term, short-term, and total debt, aligning financial resources with value creation activities. On the theoretical implications, the study aligns with Modigliani and Miller's Capital Structure Theory, emphasizing the effective management of short-term, long-term, and total debt to mitigate share price volatility and pursue an optimal capital structure. Furthermore, the findings support Signaling Theory, suggesting that Tanzanian listed companies strategically use capital structure decisions to communicate valuable information to the market. Managing debt effectively is seen as a signal of confidence in future earnings, positively influencing investor perceptions and contributing to a more stable Tanzanian market.

Based on the findings of the study on the impact of capital structure on share price volatility in Tanzania, the following recommendations are tailored to investors, listed companies, and

capital market and security authorities. Listed companies should carefully evaluate their short-term, long-term, and total debt structures, considering the negative impact of short-term and long-term debt on share price volatility. Strategic management of debt can lead to more stable share prices. Also, Companies should enhance communication with investors regarding the company's debt management policies and practices. Highlighting efforts to minimize share price fluctuations can instill confidence among investors.

Authorities should provide regulatory guidance that encourages listed companies to adopt prudent debt management strategies. This can be achieved through workshops, guidelines, or updates to existing regulations. Furthermore, CMSA should strengthen monitoring mechanisms for listed companies' capital structures to ensure transparency and help investors make informed decisions. Given the negative impact of debt on share price volatility, investors are advised to employ strategic investment approach that consider companies with effective debt management and focus on firms that demonstrate stability in their share prices. Also, leveraging the study's findings by incorporating a risk management strategy that considers the impact of both short-term and long-term debt on share price volatility. Diversifying across companies with different debt structures may help mitigate overall portfolio risk.

References

- Ahmed, Z., & Hla, D. T. (2019). Stock return volatility and capital structure measures of nonfinancial firms in a dynamic panel model: Evidence from P Pakistan. *International Journal of Finance & Economics*, 24(1), 604-628.
- Brusov, P., & Filatova, T. (2023). Capital structure theory: past, present, future. *Mathematics*, 11(3), 616.
- Brusov, P., Filatova, T., & Orekhova, N. (2022). Capital Structure: Modigliani–Miller Theory. In *Generalized Modigliani–Miller Theory: Applications in Corporate Finance, Investments, Taxation and Ratings* (pp. 9-32). Cham: Springer International Publishing.
- Brusov, P., Filatova, T., Orekhova, N., Kulik, V., Chang, S. I., & Lin, G. (2021). Generalization of the Modigliani–Miller theory for the case of variable profit. *Mathematics*, 9(11), 1286.
- Bui, T. N., Nguyen, X. H., & Pham, K. T. (2023). The effect of capital structure on firm value: A study of companies listed on the Vietnamese stock market. *International Journal of Financial Studies*, 11(3), 100.
- Cheng, F., Chiao, C., Fang, Z., Wang, C., & Yao, S. (2020). Raising short-term debt for long-term investment and stock price crash risk: Evidence from China. *Finance Research Letters*, 33, 101200.
- Dignath, D., Eder, A. B., Steinhauser, M., & Kiesel, A. (2020). Conflict monitoring and the affective-signalling hypothesis—An integrative review. *Psychonomic Bulletin & Review*, 27, 193-216.
- Dotsis, G., & Loizos, K. (2023). Bank capital regulation and the Modigliani-Miller Theorem: A Post-Keynesian perspective. *Journal of Post Keynesian Economics*, 46(2), 219-242.

- El Alaoui, A., Ismath Bacha, O., Masiha, M., & Asutay, M. (2017). Leverage versus volatility: Evidence from the capital structure of European firms. *Economic Modelling*, 62, 145-160.
- Ferdous, L. T. (2019). Capital structure theories in finance research: A historical review. *Australian Finance & Banking Review*, 3(1), 11-19.
- Fiorenza, S., Wijaya, L. I., & Sutejo, B. S. (2022). The Effect of Dividend Policy, Profitability, and Leverage on Share Price Volatility of Service Sector Enterprise Indexed on the Indonesia Stock Exchange During 2015–2019. In 19th International Symposium on Management (INSYMA 2022) (pp. 126-133). Atlantis Press.
- Karimi, G. (2020). Effect of financial leverage on the trend of stock pricing fluctuations in companies listed in Tehran stock exchange. *Propósitos y representaciones*, 8(2), 61.
- Li, S., Wang, Y., Zhang, Z., & Zhu, Y. (2022, March). Research on the Factors Affecting Stock Price Volatility. In 2022 7th International Conference on Financial Innovation and Economic Development (ICFIED 2022) (pp. 2884-2889). Atlantis Press.
- Lotto, J. (2021). Does earnings distribution policy influence corporate stock price instability? Empirical evidence from Tanzanian listed industrial firms. *Cogent Economics & Finance*, 9(1), 1953737.
- Ross, Stephen A. (1977), 'The Determination of Financial Structure: The Incentive-Signaling Approach', *Bell Journal of Economics*, Spring 1977.
- Sari, I. A. G. D. M., & Sedana, I. B. P. (2020). Profitability and liquidity on firm value and capital structure as intervening variable. *International research journal of management, IT and Social Sciences*, 7(1), 116-127.
- Sosa Castro, M. M., & Arriaga Navarrete, R. (2023). Debt and Stock Returns in the Mexican Stock Exchange (2017-2021). *Análisis económico*, 38(97), 111-128.
- Thomas, M. Y., & Ilat, V. (2021). The Effect of Asset Growth and Debt Solvency on Stock Price Volatility (Case Study of Banking Corporations Listed in the Indonesia Stock Exchange for the Period of 2011-2018). *Accountability*, 10(1), 27-32.
- Vuong, T. H. G., Wu, Y. C., Weng, T. C., Nguyen, H. M., & Vo, X. V. (2023). Capital structure choices and stock market volatility: Evidence from Chinese listed firms. *The Chinese Economy*, 56(1), 25-49.
- Xiang, X., Dong, F., & Chen, J. (2021). Financing Constraints and Stock Price Volatility Empirical Evidence from Shanghai and Shenzhen A-share listed Companies. In E3S Web of Conferences (Vol. 235, p. 01029). EDP Sciences.
- Yasar, B., Martin, T., & Kiessling, T. (2020). An empirical test of signalling theory. *Management Research Review*, 43(11), 1309-1335.