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The Effect of Capital Structure on the Profitability of Listed Companies: Short-Run and Long-Run Evidence from Zambia

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Abstract

This study examined the effect of capital structure on the profitability of companies listed on the Lusaka Securities Exchange, with particular attention to the short-run and long-run dynamics between leverage and gross profit. Financing decisions are central to corporate management in developing economies such as Zambia, where access to equity finance is limited, and firms rely heavily on debt. The study assessed the effect of three capital structure indicators, namely the Debt to Asset Ratio (DAR), the Debt to Equity Ratio (DER) and the Debt Coverage Ratio (DCR), on profitability measured by Gross Profit (GP). A mixed methods design with a dominant quantitative strand was adopted. The quantitative strand used a longitudinal design covering annual observations for the period 2004 to 2024, which permitted the analysis of trends and dynamic relationships over time, while the qualitative strand drew on semi-structured interviews with ten finance professionals to explain and add depth to the statistical results. The data were analysed using the Augmented Dickey-Fuller unit root test, the Johansen cointegration test, Ordinary Least Squares regression and a Vector Error Correction Model. The findings showed that the Debt to Asset Ratio, the Debt to Equity Ratio and the Debt Coverage Ratio each had a positive and significant effect on gross profit in the long run, all significant at the five per cent level, while the Debt to Asset Ratio had a negative and significant effect in the short run. These results indicated that Zambian firms benefited from the strategic use of leverage over time, although debt imposed short-run financial pressure before its long-run benefits were realised. The study concluded that capital structure is an important determinant of firm profitability in Zambia, provided that debt is well managed and adequately serviced.

1. Introduction

One of the most consequential decisions a firm makes concerns its capital structure, that is, the proportion in which its operations are financed by debt as opposed to equity. The decision matters because financing choices bear directly on profitability, on the cost of capital and on a firm's exposure to financial risk. In developing economies such as Zambia, the question carries additional weight. Equity markets are thin, the Lusaka Securities Exchange lists a modest number of firms, and access to affordable long-term equity finance is limited, so companies rely heavily on debt to fund investment and growth (World Bank, 2023). Understanding how that reliance on debt translates into profitability is therefore of direct practical importance to managers, regulators and investors.

The theoretical debate on capital structure has been shaped by the irrelevance propositions of Modigliani and Miller (1958), and by the trade-off and pecking order perspectives that followed. Yet the empirical evidence remains mixed and context-dependent, with results differing across institutional settings, levels of financial development and macroeconomic conditions. Much of the Zambian and wider Sub-Saharan evidence has relied on static models that estimate a single relationship between leverage and performance, and that treat the association as though it were fixed over time. Such models are ill-suited to a setting in which the cost of debt is high and volatile, and in which the effect of a financing decision may differ sharply between the period immediately following the decision and the longer horizon over which the firm adjusts.

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This study addressed that gap by examining the effect of capital structure on the profitability of firms listed on the Lusaka Securities Exchange, and by distinguishing explicitly between short-run and long-run effects. Three objectives guided the study: first, to examine the effect of capital structure on the gross profit of listed companies; second, to determine the influence of the individual capital structure indicators, the Debt to Asset Ratio, the Debt to Equity Ratio and the Debt Coverage Ratio, on gross profit; and third, to assess the short-run and long-run dynamic relationship between capital structure and profitability. Corresponding to the first two objectives, the study tested the null hypotheses that capital structure, and each of its three indicators, has no significant effect on the gross profit of listed companies.

The contribution of the study is twofold. Methodologically, it applied a Vector Error Correction Model within the Zambian listed-firm context, thereby recovering both the long-run equilibrium relationship between leverage and profitability and the speed at which firms return to that equilibrium after a short-run shock. Substantively, it provided evidence that the leverage-profitability relationship in Zambia is dynamic rather than static: debt exerts downward pressure on profitability in the short run while contributing positively over the longer horizon, with debt-servicing capacity emerging as the factor that bridges the two.

2 Literature Review

2.1 Theoretical framework

The modern theory of capital structure begins with Modigliani and Miller (1958), who demonstrated that, in a frictionless world without taxes, bankruptcy costs or information asymmetry, firm value is independent of the financing mix. Their subsequent correction recognised the tax deductibility of interest, which confers an advantage on debt (Modigliani & Miller, 1963). The trade-off theory, developed from the state-preference model of Kraus and Litzenberger (1973), holds that firms balance the tax shield and other benefits of debt against the rising expected costs of financial distress, and thereby converge towards an optimal, interior level of leverage. The present study's expectation of a positive but bounded effect of leverage on profitability follows directly from this view.

The pecking order theory of Myers and Majluf (1984) and Myers (2001) offers a complementary account grounded in information asymmetry. Because outside investors cannot fully observe firm quality, external equity is the most expensive source of finance, and firms therefore prefer internal funds first, debt second and equity only as a last resort. In a market such as Zambia, where equity issuance is costly and infrequent, the pecking order logic predicts a heavy and rational reliance on debt. The agency framework of Jensen and Meckling (1976) adds that the obligation to service debt disciplines managers by constraining the free cash flow available for unproductive uses, so that a measured increase in leverage can improve performance. Titman and Wessels (1988) and Rajan and Zingales (1995) provided influential early evidence on the firm-level determinants of these financing choices.

2.2 Empirical evidence

Empirical findings on the leverage-profitability relationship are far from uniform. In the African context, Abor (2008) and Addae, Nyarko-Baasi and Hughes (2013) reported that the sign of the relationship in Ghana depends on debt maturity, with short-term debt and long-term debt behaving differently. Margaritis and Psillaki (2010) found that leverage and firm performance are jointly determined, while Ahmed and Bhuyan (2020) and Pham, Hoang and Pham (2022) documented positive and negative associations respectively in other emerging and developed settings, underscoring the sensitivity of the result to sector and method. Boateng and others (2022) reviewed the accumulated evidence and concluded that the determinants of capital structure decisions remain contested.

Zambian evidence points more consistently towards the costs of debt in a high-interest environment. Handema and Haabazoka (2020) found that the debt ratio was negatively associated with return on assets for listed and banking-sector firms, and Simpasa (2023) documented a post-2020 debt overhang that depressed investment and profitability. Chola (2024) showed that macroeconomic conditions materially shape stock-market performance in Zambia. Most of this work, however, estimates a static relationship. The partial-adjustment insight of Flannery and Rangan (2006), and the dynamic testing of trade-off and pecking-order predictions by Fama and French (2002), together motivate a modelling strategy that separates the short-run cost of leverage from its long-run contribution. The absence of such a dynamic treatment in the Zambian listed-firm literature is the gap this study addressed.

3 Methodology

3.1 Research design and data

The study adopted a mixed methods design with a dominant quantitative strand and a supporting qualitative strand. The quantitative strand followed a longitudinal, time-series design using annual observations for firms listed on the Lusaka Securities Exchange over the period 2004 to 2024, yielding twenty-one annual observations. Secondary data were drawn from audited financial statements and the Annual Statistical Bulletin of the Lusaka Securities Exchange (2024). The qualitative strand consisted of semi-structured interviews with ten finance professionals, including chief financial officers and financial managers, and was intended not to generate independent conclusions but to explain and enrich the statistical findings.

3.2 Variables

Profitability, the dependent variable, was measured by Gross Profit (GP). Capital structure, the independent construct, was captured by three indicators: the Debt to Asset Ratio (DAR), defined as the proportion of total assets financed by debt; the Debt to Equity Ratio (DER), the ratio of debt to shareholders' equity; and the Debt Coverage Ratio (DCR), the ability of operating income to meet total debt obligations. The first two indicators measure the level of gearing, while the third measures the firm's capacity to service its debt, a distinction that proves central to the interpretation of the results.

3.3 Estimation strategy

The analysis proceeded in four stages. First, the Augmented Dickey-Fuller (ADF) unit root test was applied, with a constant and at level, to establish the

order of integration of each series and to guard against spurious regression. Second, the Johansen cointegration test was used to determine whether the variables share a stable long-run equilibrium relationship. Third, an Ordinary Least Squares (OLS) regression estimated the overall relationship between the capital structure indicators and gross profit. Fourth, a Vector Error Correction Model (VECM), specified with a lag length of one consistent with the small sample, was estimated to separate the short-run adjustment dynamics from the long-run equilibrium relationship and to recover the speed of adjustment through the error correction term. The robustness of the OLS estimates was assessed using the Ramsey RESET test for specification error, the Breusch-Godfrey test for autocorrelation, the Breusch-Pagan test for heteroscedasticity, the Variance Inflation Factor for multicollinearity, the Jarque-Bera test for normality, and the CUSUM and CUSUM of squares tests for parameter stability.

4 Results and Discussion

4.1 Descriptive statistics

Table 1 summarises the distribution of the study variables. Gross profit averaged 27.09 with a standard deviation of 5.79, ranging from 16.21 to 37.17, indicating moderate but variable profitability across the period. The mean Debt to Asset Ratio of 0.48 shows that roughly forty-eight per cent of assets were financed by debt, while the mean Debt to Equity Ratio of 1.37 confirms that debt predominated over equity. The Debt Coverage Ratio averaged only 0.43, a comparatively low figure implying that, on average, earnings before interest and tax covered less than half of total debt obligations, with meaningful variation from 0.12 to 0.73 in firms' capacity to service debt.

Table 1: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
GP	21	27.09	5.79	16.21	37.17
DAR	21	0.48	0.18	0.21	0.78
DER	21	1.37	0.58	0.59	2.43
DCR	21	0.43	0.22	0.12	0.73

Source: Lusaka Securities Exchange (2024), Annual Statistical Bulletin 2004 to 2024.

4.2 Correlation analysis

The pairwise correlations reported in Table 2 show a moderate and significant positive association between gross profit and the Debt to Asset Ratio ($r = 0.45$, $p = 0.0385$) and a strong and highly significant positive association with the Debt to Equity Ratio ($r = 0.75$, $p = 0.0001$). The correlation between gross profit and the Debt Coverage Ratio was positive but weaker and not statistically significant ($r = 0.37$, $p = 0.1002$). Correlations among the independent variables were uniformly weak, and none approached the 0.8 threshold that would signal severe multicollinearity, a conclusion later confirmed by the Variance Inflation Factor.

Table 2: Correlation test results

Variables	r	p-value	Interpretation
DAR and DER	-0.01	0.9619	No significant correlation
DAR and DCR	0.27	0.2420	Weak positive; not significant
DAR and GP	0.45	0.0385	Moderate positive; significant
DER and DCR	-0.03	0.8987	No significant correlation
DER and GP	0.75	0.0001	Strong positive; significant
DCR and GP	0.37	0.1002	Weak to moderate; not significant

Source: Author's computation from Lusaka Securities Exchange (2024) data.

4.3 Unit root and cointegration tests

The ADF results in Table 3 show that all four series are stationary at level, that is, integrated of order zero, I(0). For every variable the test statistic is more negative than the relevant critical value and significant at the one per cent level, so the null hypothesis of a unit root is rejected in each case. Stationarity at level justifies the use of OLS to estimate the level relationship without the risk of spurious regression.

Table 3: Augmented Dickey-Fuller unit root test (at level, with constant)

Variable	Order	t-statistic	Probability	Conclusion
GP	I(0)	-4.657	0.0001	Stationary
DAR	I(0)	-3.882	0.0022	Stationary
DER	I(0)	-4.186	0.0007	Stationary
DCR	I(0)	-4.142	0.0008	Stationary

Source: Author's computation. Significance assessed at the five per cent level.

Even where variables are individually stationary, cointegration testing remains informative about whether their linear combination follows a stable long-run path. The Johansen results in Table 4 reject the null of no cointegration: the trace statistic of 65.350 and the maximum eigenvalue statistic of 36.715 both exceed their five per cent critical values. The subsequent hypotheses of at most one, two and three cointegrating vectors are not rejected, so the tests converge on exactly one cointegrating relationship. The presence of a single cointegrating vector confirms a unique long-run equilibrium among the variables and provides the econometric justification for the error correction specification that follows.

Table 4: Johansen cointegration test results

Null hypothesis	Trace	CV (5%)	Max-Eigen	CV (5%)	Conclusion
r = 0 (none)	65.350	47.855	36.715	27.586	Reject H0
r ≤ 1	28.636	29.796	15.420	21.131	Do not reject
r ≤ 2	13.215	15.494	10.008	14.264	Do not reject
r ≤ 3	3.208	3.842	3.208	3.842	Do not reject

Source: Author's computation. Lag length k = 1; restricted constant; critical values from Johansen and Juselius (1990).

4.4 Effect of capital structure on gross profit (Objective One)

The OLS model summary in Table 5 confirms that the capital structure indicators jointly explain gross profit. The model is highly significant, with an F-statistic of 35.12 and a p-value below 0.0001, so the null hypothesis that the coefficients are jointly zero is strongly rejected. The R-squared of 0.8611 indicates that approximately eighty-six per cent of the variation in profitability is explained by the three indicators, and the adjusted R-squared of 0.8365 remains high, while the root mean square error of 2.3402 signals accurate in-sample prediction. The accompanying analysis of variance reinforced this conclusion, with a model sum of squares of 576.98 dominating the residual sum of squares of 93.10. These results establish that capital structure is a statistically significant determinant of profitability for the listed firms studied.

Table 5: OLS model summary

Statistic	Value
Number of observations	21
F(3, 17)	35.12
Prob > F	0.0000
R-squared	0.8611
Adjusted R-squared	0.8365
Root MSE	2.3402

Source: Author's computation from Lusaka Securities Exchange (2024) data.

4.5 Influence of the individual indicators and long-run estimates (Objective Two)

The long-run coefficients recovered from the cointegrating equation are reported in Table 6. All three indicators exert a positive and statistically significant effect on gross profit. The Debt to Asset Ratio carries a coefficient of 12.290 (p = 0.001), implying that a 0.1 rise in asset-based leverage is associated with an increase of about 1.23 units in gross profit over the long run. The Debt-to-Equity Ratio has a coefficient of 7.637 (p = 0.000), so a 0.1 increase corresponds to roughly a 0.76-unit rise in gross profit, while the Debt Coverage Ratio has a coefficient of 7.919 (p = 0.007), indicating that a 0.1 improvement in debt-servicing capacity raises gross profit by about 0.79 units. On the strength of these results the null hypotheses for all three indicators are rejected in favour of the alternatives. The findings are consistent with the trade-off theory, in that firms appear to benefit from debt up to a level at which its advantages outweigh its costs, and with the pecking order theory, in that the reliance on debt over equity is rational in a market where equity finance is costly and limited.

Table 6: Long-run (cointegrating) coefficients, dependent variable GP

Variable	Coefficient	Std. Err.	t	p-value
DAR	12.290	2.987	4.11	0.001
DER	7.637	0.900	8.49	0.000
DCR	7.919	2.578	3.07	0.007
Constant	7.379	2.069	3.57	0.002

Source: Author's computation. All coefficients significant at the five per cent level.

4.6 Short-run and long-run dynamics (Objective Three)

The vector error correction estimates for the gross profit equation are presented in Table 7. The error correction term is positive and significant (β = 2.068, p = 0.004), confirming the long-run equilibrium relationship implied by the cointegration test and the tendency of the system to adjust back towards it. Among the short-run regressors, only the lagged change in the Debt to Asset Ratio is significant, and its effect is negative (β = -22.730, p = 0.028): a ten per cent rise in asset-based leverage is associated with a reduction of about 2.27 units in gross profit in the short run, reflecting the immediate burden of interest and repayment obligations. The lagged changes in the Debt-to-Equity Ratio and the Debt Coverage Ratio are not significant in the short run, indicating that profitability does not respond to them immediately.

Table 7: VECM short-run estimates, gross profit equation (ΔGP)

Regressor	Coefficient	Std. Err.	z	p-value
Error correction term (t-1)	2.068	0.727	2.84	0.004
ΔGP (t-1)	-0.280	0.590	-0.47	0.635
ΔDAR (t-1)	-22.730	10.318	-2.20	0.028
ΔDER (t-1)	0.144	4.792	0.03	0.976
ΔDCR (t-1)	4.412	6.286	0.70	0.483
Constant	0.003	1.295	0.00	0.998

Source: Author's computation. Δ denotes the first difference; (t-1) denotes a one-period lag.

The wider system reinforces this reading. The error correction terms in the Debt to Equity Ratio and Debt Coverage Ratio equations are both positive and significant (β = 0.246, p < 0.001 and β = 0.062, p = 0.004 respectively), showing that firms actively adjust their gearing and their credit-risk position towards long-run equilibrium. Within the Debt Coverage Ratio equation, higher profitability significantly reduces credit risk (β = -0.048, p = 0.006), while a higher Debt to Equity Ratio raises it (β = 0.383, p = 0.007). Taken together with the long-run estimates, these dynamics describe a relationship in which leverage is costly at first but rewarding over time. The significant error correction term is the empirical signature of a partial-adjustment process: a financing decision that appears costly in the short run may still be sound over the longer horizon, provided the firm has the debt-servicing capacity,

captured by the Debt Coverage Ratio, to sustain its obligations while the adjustment takes place. Debt-servicing capacity therefore emerges as the factor that bridges the immediate cost of leverage and its eventual contribution to profitability.

4.7 Diagnostic tests

The diagnostic results in Table 8 confirm the adequacy of the OLS model. The Ramsey RESET test finds no evidence of omitted-variable bias, the Breusch-Godfrey test finds no serial correlation, and the Breusch-Pagan test finds constant error variance. The mean Variance Inflation Factor of 1.05 is far below the conventional threshold of ten, so multicollinearity is not a concern, and the Jarque-Bera test does not reject the normality of the residuals. The CUSUM and CUSUM of squares statistics remained within their critical bounds throughout the period, indicating stable coefficients and no structural breaks. The estimates may therefore be regarded as reliable and suitable for inference.

Table 8: Summary of diagnostic tests

Test	Statistic	Value	p-value	Conclusion
Ramsey RESET (specification)	F(3, 14)	1.38	0.2901	Correctly specified
Breusch-Godfrey (autocorrelation)	Chi2(1)	0.003	0.9568	No serial correlation
Breusch-Pagan (heteroscedasticity)	Chi2(1)	1.11	0.2911	Homoscedastic
Jarque-Bera (normality)	Chi2(2)	0.4506	0.7983	Residuals normal
Variance Inflation Factor	Mean VIF	1.05	n/a	No multicollinearity

Source: Author's computation. All tests assessed at the five per cent level.

4.8 Qualitative insights

The interviews with ten finance professionals complemented the statistical results. Respondents described debt as a deliberate instrument for funding growth rather than a financing choice of last resort, and reported that they monitor their gearing closely and respond to changes in the economic environment. They emphasised that maintaining strong cash flows is essential to remaining profitable, echoing the quantitative finding that it is not merely access to debt but the capacity to sustain it that shapes profitability. This convergence between the qualitative accounts and the econometric evidence strengthens the conclusion that debt-servicing capacity is central to the leverage-profitability relationship in Zambia.

5 Conclusion and Recommendations

The study set out to examine the effect of capital structure on the profitability of companies listed on the Lusaka Securities Exchange, and to distinguish the short-run and long-run components of that effect. The evidence is clear on three points. First, capital structure is a statistically significant determinant of gross profit, jointly explaining the greater part of its variation. Second, each of the three indicators, the Debt to Asset Ratio, the Debt to Equity Ratio and the Debt Coverage Ratio, exerts a positive and significant effect on profitability in the long run. Third, the relationship is dynamic rather than static: asset-based leverage depresses profitability in the short run through the immediate burden of debt service, yet contributes positively once the firm has adjusted, with the speed of adjustment captured by a significant error correction term. Debt is thus both a short-run constraint and a long-run enhancer of profitability, and debt-servicing capacity is the factor that allows firms to convert the one into the other.

These findings carry practical implications for three groups. Corporate managers should maintain an optimal capital structure that draws on the benefits of debt for investment while avoiding the level of borrowing that exposes the firm to undue risk, and should strengthen debt-servicing capacity through improved operating efficiency and cash-flow management. Financing strategy should be matched to the stability of a firm's earnings and reviewed regularly as macroeconomic conditions change, rather than treated as fixed. Policymakers and regulators, including the Securities and Exchange Commission and the Bank of Zambia, should encourage the prudent use of debt, improve access to affordable long-term finance so that firms can align their borrowing with the horizon over which debt supports profitability, and monitor aggregate leverage so that any build-up of systemic risk is identified early. Investors, for their part, should weigh both a firm's level of leverage and its capacity to service that debt when assessing its prospects, since a company that manages, its obligations well are better placed to sustain profitability over time.

The study is subject to limitations that also indicate directions for future work. The analysis rests on a modest number of listed firms and on annual data, which limits generalisability to unlisted firms and small and medium enterprises. Macroeconomic influences such as inflation, exchange-rate movements and interest-rate shocks were not modelled explicitly, and the capital structure construct was confined to three indicators. Future research could widen the sample, incorporate macroeconomic moderators and additional firm-level determinants such as size, liquidity and governance, and apply complementary techniques such as dynamic panel estimators or sector-specific models to deepen the understanding of how capital structure shapes profitability in Zambia.

Declaration of Competing Interests

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Ethical considerations

The article followed all ethical standards appropriate for this kind of research.

References

Abor, J. (2008). Determinants of the capital structure of Ghanaian firms. African Economic Research Consortium, Nairobi.

Addae, A. A., Nyarko-Baasi, M., & Hughes, D. (2013). The effects of capital structure on profitability of listed firms in Ghana. European Journal of Business and Management, 5(31), 215-229.

Ahmed, R., & Bhuyan, R. (2020). Capital structure and firm performance in Australian service sector firms: A panel data analysis. Journal of Risk and Financial Management, 13(9), 214.

Boateng, P. Y., Ahamed, B. I., Soku, M. G., Addo, S. O., & Tetteh, L. A. (2022). Influencing factors that determine capital structure decisions: A review from the past to present. Cogent Business & Management, 9(1), 2152647.

Chola, C. (2024). The effect of selected macroeconomic factors on stock market performance in Zambia. Management Journal for Advanced Research, 4(1), 102-113.

Fama, E. F., & French, K. R. (2002). Testing trade-off and pecking order predictions about dividends and debt. The Review of Financial Studies, 15(1), 1-33.

Flannery, M. J., & Rangan, K. P. (2006). Partial adjustment toward target capital structures. Journal of Financial Economics, 79(3), 469-506.

Handema, M., & Haabazoka, L. (2020). The effect of capital structure management on commercial bank financial performance: A case of the Zambian banking sector. In E. G. Popkova & B. S. Sergi (Eds.), Scientific and Technical Revolution: Yesterday, Today and Tomorrow (pp. 1716-1736). Springer.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics, 3(4), 305-360.

Johansen, S. (1988). Statistical analysis of cointegration vectors. Journal of Economic Dynamics and Control, 12(2-3), 231-254.

Johansen, S., & Juselius, K. (1990). Maximum likelihood estimation and inference on cointegration with applications to the demand for money. Oxford Bulletin of Economics and Statistics, 52(2), 169-210.

Kraus, A., & Litzenberger, R. H. (1973). A state-preference model of optimal financial leverage. The Journal of Finance, 28(4), 911-922.

Lusaka Securities Exchange. (2024). Annual Statistical Bulletin 2004 to 2024. Lusaka: Lusaka Securities Exchange.

Margaritis, D., & Psillaki, M. (2010). Capital structure, equity ownership and firm performance. Journal of Banking & Finance, 34(3), 621-632.

Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. The American Economic Review, 48(3), 261-297.

Modigliani, F., & Miller, M. H. (1963). Corporate income taxes and the cost of capital: A correction. The American Economic Review, 53(3), 433-443.

Myers, S. C. (2001). Capital structure. Journal of Economic Perspectives, 15(2), 81-102.

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. Journal of Financial Economics, 13(2), 187-221.

Pham, N. H., Hoang, T. M., & Pham, N. T. H. (2022). The impact of capital structure on bank profitability: Evidence from Vietnam. Cogent Business & Management, 9(1), 2096263.

Phiri, A. (2021). Econometric methods for time series analysis in the African context. Cham: Palgrave Macmillan.

Rajan, R. G., & Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. The Journal of Finance, 50(5), 1421-1460.

Simpasa, A. M. (2023). Debt overhang and investment: Zambian listed firms. African Development Bank Working Paper Series No. 345.

Titman, S., & Wessels, R. (1988). The determinants of capital structure choice. The Journal of Finance, 43(1), 1-19.

World Bank. (2023). Zambia economic update: Financing for development. Washington, DC: World Bank.