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Alice Nduwimana, Ndonwabile Zimasa Mabandla, Godfrey Marozva

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Firm Performance and capital structure: does liquidity matter?

Alice Nduwimana, Ndonwabile Zimasa Mabandla, Godfrey Marozva (University of South Africa - UNISA)

Corresponding author: Ndonwabile Zimasa Mabandla (mabannz@unisa.ac.za)

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Abstract

This research examines how capital structure and liquidity impact the financial performance of South African firms from 2012 to 2023. Using panel data methodologies and the Generalised Method of Moments (GMM) estimation, the study addresses potential endogeneity issues and inaccuracies in the dataset. The findings reveal a negative and significant relationship between the proportion of long-term debt ratio (LTDR) and corporate profitability, measured by return on assets (ROA) and return on equity (ROE). This suggests that a higher reliance on long-term borrowing negatively affects corporate outcomes. In contrast, liquidity metrics, represented by the current ratio (CUR) and quick ratio (CR), show a direct and significant positive effect on return on asset (ROA), return on equity (ROE) and Tobin's Q. These results imply that firms with stronger liquidity positions are better able to meet their immediate financial obligations and capitalise on growth opportunities, thereby enhancing their financial performance. The study provides valuable insights for corporate finance policies and suggests directions for future research on corporate financial strategies in developing economies.

Keywords: Capital Structure, Liquidity, Financial Performance, Trade-off Theory, Pecking Order Theory, and Emerging Markets.

1. Introduction and background

This article provides a critical analysis of the impact of capital structure and liquidity on company performance, with a specific focus on the South African corporate landscape. Within this context, liquidity appears as a vital factor, intricately linked with capital structure in determining performance results. As noted by Miglo (2016) and Hannyama, Kabwe, and Zulu (2025), capital structure pertains to the proportional combination of debt and equity employed by firms to finance their operations. Traditionally, this concept was regarded as a highly technical and peripheral matter, managed by only a limited number of finance experts within companies. Cornett, Adair, and Nofsinger (2018) propose that capital structure was frequently considered either static or irrelevant to wider financial decision-making.

In contrast, liquidity is characterised by a firm's capability to fulfill its financial commitments as they arise, and to maintain its operational and expansion activities (Nguyen, Phan, & Hang, 2024; Nguyen & Dao, 2022; Adebiyi, 2021; Bodie, Kane & Marcus, 2017). This analysis situates liquidity as a fundamental component in the interaction between capital structure and performance. The core proposition is that decisions regarding capital structure cannot independently lead to optimal company outcomes if restrictions in liquidity exist. In this context, liquidity functions as a facilitating factor that guarantees the operational success and efficacy of a company's financial framework.

On the other hand, firm performance is viewed as a vital tool for determining whether a firm is thriving or struggling. According to Suwaidan, Al-Khoury, Areiqat, and Cherrati, (2021), financially strong companies are more likely to report openly and gain the trust of investors. Many elements, such as technological progress, employee alignment, communication quality, and how well a company responds to customers, have an impact on performance. However, profitability is the most commonly accepted measure of performance. Profitability not only indicates a firm's ability to manage expenses and earn revenue (Nassar, 2016) but also acts as a crucial standard for assessing sustainability (Etale, Ochuba & Sawyer, 2021). Therefore, firm performance is the main perspective through which this study examines how effectively capital structure and liquidity are managed.

This study also highlights the intricate two-way link between how a firm is financed and how well it performs. On one side, having the right mix of debt and equity can boost a firm’s success (Doan, 2020; Amare, 2021). On the flip side, better financial outcomes might enable a firm to secure loans more easily and on better terms (Abdullah & Tursoy, 2021). According to Yusuf, Al Attar, and Al Shattarat (2015), if financing choices are poor, they can lead to financial troubles, but smart financial structuring can improve both value and efficiency. Yet, as noted by Marozva (2019) and Brunnermeier and Oehmke (2012), there are still gaps in how we measure overall liquidity, making it tricky to evaluate its impact on a firm’s performance.

The academic literature examining the relationship between liquidity, financial gearing, and firm performance has produced inconclusive and often conflicting results. Some research highlights a positive link between liquidity, leverage, and firm performance (Sharma & Sarin, 2024; Abubakar, 2023; Jihadi, Vilantika, Hashemi, Arifin, Bachtiar, & Sholichah, 2021; Zaitoun & Alqudah, 2020), while other studies find a negative connection (Daryanto, Samidi, & Siregar, 2018; Källum & Sturesson, 2017). However, other studies suggest that increased liquid assets and debt financing can enhance corporate performance by facilitating investment and optimising capital allocation (Abubakar, 2023; Jihadi, Vilantika, Hashemi, Arifin, Bachtiar, & Sholichah, 2021). In contrast, other research indicates that excessively high levels of liquid assets and debt may exacerbate financial instability and hinder positive outcomes (Daryanto, Samidi, & Siregar, 2018). These inconsistencies are further complicated by external factors, such as the macroeconomic environment, industry characteristics, and legal frameworks, all of which can significantly influence these relationships (Källum & Sturesson, 2017).

Despite extensive research across various international contexts, there remains a notable gap in understanding the effects of liquidity and financial gearing on firm performance in specific developing market situations like South Africa, which has unique economic and regulatory characteristics. This highlights the need for further empirical analysis to clarify these relationships and provide insights that can inform corporate governance and policy development.

Thus, this study seeks to explore the relationship between liquidity, financial leverage, and firm performance among firms in South Africa, providing a deeper understanding of these dynamics in developing economies. Developing economies are argued to be structurally, fundamentally, and technically different from the developed world (Marozva, 2020).

This research presents various contributions to the extant scholarly knowledge. Firstly, it addresses a significant gap in the South African academic discourse by concurrently investigating the influences of capital structure and liquidity on firm performance domains frequently analysed separately. Secondly, the study posits liquidity as an intervening variable that either amplifies or restricts the effects of capital structure choices on corporate results. This approach thus reconceptualises liquidity not just as an auxiliary element, but as a crucial aspect of financial planning and viability.

Thirdly, the study enriches the theoretical conversation by shedding light on the direction and intricacies of how capital structure, liquidity, and a company's performance interact, especially in growing markets. Fourthly, it offers valuable advice for corporate finance managers by emphasising the dangers of overlooking liquidity management. Lastly, the real-world evidence from South African companies provides insights tailored to the context, which could guide policymaking, financial strategy, and risk management in comparable economic environments.

The article unfolds in the following manner: First, in Section 2, we delve into the theoretical concepts surrounding capital structure, liquidity, and company performance. Next, Section 3 guides us through the methodological approach, discussing the study's design, where the data comes from, an explanation of the variables used, and the econometric model applied. Then, Section 4 highlights and explains the results we observed, leading us to the wrapping up in Section 5, where we draw conclusions and explore the implications for policy.

2. Literature Review

2.1 Theoretical literature

The relationship between a firm’s capital structure and its performance has been extensively studied, starting with the foundational work of Modigliani and Miller in 1958. They demonstrated that, in a perfect market, one without taxes, bankruptcy costs, or information asymmetry, the mix of debt and equity does not impact firm value. However, when considering more realistic assumptions, various theories emerge that explain financing behaviour from different perspectives. One of these theories, known as the Trade-off Theory, was further developed by Miller in 1977. It argues that firms weigh the tax advantages of debt against the costs of potential financial distress. By balancing interest tax shields with the risks of insolvency and managerial constraints, firms are expected to determine an optimal debt-equity mix (Myers, 2015). This framework portrays capital structure as a balancing act between benefits and risks.

Another perspective emphasizes the role of information asymmetry between managers and investors. The Pecking Order Theory, proposed by Myers and Majluf in 1984, suggests that firms have a hierarchy of financing preferences: they prefer to use internal funds first, then debt, and will only issue equity as a last resort. This order reflects the managerial understanding of firm value compared to that of outside investors, where issuing equity may be viewed negatively by the market. Empirical evidence, such as that from Bui et al. (2023), indicates that financially weaker firms often rely more on debt due to limited internal resources. Similarly, Signaling Theory, introduced by Ross in 1977, posits that financing choices convey information to the market. Issuing debt can serve as a positive signal, demonstrating managerial confidence in future cash flows, as interest obligations must be met regardless of a firm's performance (Kerongo, 2022).

Another important area of research focuses on conflicts of interest within firms. The Agency Cost Theory, articulated by Jensen and Meckling in 1976 and later expanded by Myers in 1977, highlights tensions among managers, shareholders, and creditors, where agency costs arise from differing objectives. These inefficiencies can be mitigated through monitoring, bonding costs,

or aligning incentives (Mabandla, 2023). Building on this, Jensen (1986) introduced the Free Cash Flow Hypothesis, which argues that firms with excess liquidity, but limited investment opportunities, may face overinvestment or wasteful spending. Debt can act as a disciplinary mechanism, obligating managers to meet fixed financial commitments. Thus, free cash flow serves as both a measure of financial capacity and a potential source of governance challenges (Suciani & Setyawan, 2022). Together, these perspectives illustrate that capital structure decisions are influenced not by a single principle but rather by a combination of trade-offs, information dynamics, and agency considerations.

2.2 Empirical studies and hypothesis development

This section reviews empirical studies that examine the effects of capital structure and liquidity on firm performance.

2.2.1 Firm Performance and Capital Structure

Many studies have delved into how a company's financial structure affects its success, yielding different results. Abubakar (2020) found that leverage indicators, short-term debt ratio (STDR), and long-term debt ratio (LTDR) had no significant influence on the return on equity (ROE) in Nigerian oil and gas firms. On the other hand, Kalash (2021) noted that leverage negatively impacted business performance in Turkey, especially during currency crises. Ahmed, Nugraha, and Hågen (2023) observed both negative and positive effects, depending on which measures were used, while Ronoowah and Seetanah (2024) identified complex relationships and the mediating role of agency costs. Conversely, Moradi and Paulet (2019), along with Abdullah and Tursoy (2023), presented conflicting findings showing positive links between leverage and performance in specific situations. Overall, academic literature shows there's no clear agreement, suggesting that these relationships are nuanced and dependent on context.

H1: There is a significant relationship between capital structure and firm performance.

2.2.2 Liquidity and Firm Performance

The research on liquidity and company performance shows varied results across different studies. Sharma and Sarin (2024) found that liquidity significantly and positively influences Return on Assets (ROA), though it has a weaker effect on Return on Equity (ROE); meanwhile, leverage negatively impacts ROA. Nguyen and Dao (2022), using meta-analysis, concluded that certain liquidity measures may harm business performance, yet robust corporate governance boosts firm value. Abubakar (2020) discovered positive and meaningful connections between liquidity indicators and ROA for Nigerian companies. Furthermore, Zaitoun and Alqudah (2020), along with Alfawareh *et al.* (2021b) and Alhassan and Islam (2021), identified positive links between liquidity and company profitability. In summary, these studies suggest that managing liquidity effectively is vital for company success, though its exact influence depends on specific contexts and methods used.

H_2 There is a significant relationship between liquidity and firm performance.

3. Research Methodology

This study utilises a balanced panel dataset consisting of firms from the Top 40 companies listed on the Johannesburg Stock Exchange (JSE). After accounting for delistings, mergers, and incomplete financial. Also, financial institutions were excluded; thus, 31 firms were retained for analysis. The exclusion of nine firms ensured the consistency and reliability of the panel throughout the study period (2012–2023). Audited financial statement data were sourced from the IRESS database and used to calculate relevant financial ratios. As a result, the final sample comprises firms that were continuously listed and had complete and dependable data throughout the study period. This selected timeframe allows for a comprehensive examination of the effects of capital structure and liquidity on corporate performance within the South African context. Given the focus on JSE-listed firms, the sectoral classification aligns with the South African Standard Industrial Classification (SIC). The sectors typically represented among the Top 40 JSE companies in this study include: Materials/Resources (for example, mining, metals), Consumer Discretionary (for example, retail, automotive), Industrials (for example, manufacturing, logistics), and Energy (for example, oil and gas, energy utilities). The dependent variables, namely Return on Equity (ROE), Return on Assets (ROA), and Tobin's Q, are extensively utilised in scholarly research to evaluate corporate success (Nguyen, Le, & Nguyen, 2023; Ramadan & Hassan, 2022 & Ullah, 2020).

The explanatory variables include leverage and liquidity. Leverage metrics, such as the debt-equity ratio, long-term debt to total assets, and total debt to total assets, are incorporated due to their acknowledged linkage with corporate performance, risk, and cost of capital (Abubakar, 2020). Liquidity measures, such as the current ratio and cash flow ratio, are integrated as they indicate companies' capacities to meet short-term liabilities and adjust to market variations, which are crucial for sustaining performance (Ndugbu et al., 2024).

Table 1: Summary of variables and proxies

Name of variables	Measurements	Use in literature	A priori expectation
		Dependent variables	
Return on Equity (ROE)	Net profit ÷ Owner's equity	Marozva and Makina (2020) and Omokore, Njogo, Omankhanlen, Islaka, and Akinjare (2024)	
Return on assets (ROA)	EBIT÷ total assets	Antwi, (2021), and Nguyen and Nguyen, (2020).	
Tobin's Q (TQ)	(Total market value of company +Liquidity) ÷ (Total asset value + Liabilities)	*Nguyen, Phan, and Hang (2024)*	
		Independent variables	
$LEV_{B_{it}}$ **Leverage**:			
Debt- equity (DE)	Debt ÷ Equity	Kerongo, (2022) and Siaf - Alyousfi *et al., (*2020).	+/-
Long-term debt (LTD)	LTL÷ TA	Mabandla and Marozva (2024).	
Total debt ratio (TDR)	TD ÷ TA	Mabandla and Marozva (2025).	
$LIQ_{B_{it}}$ **Liquidity:**			
Current ratio (CUR)	Current assets ÷ current liabilities	Kalash (2023); Nam, and Tuyen, (2024)	+/-
Cash ratio (CR)	(Cash + marketable securities) ÷ current liabilities	Surachman, and Ningsih, (2023).	+/-
		Control variables	
Firm size (FS)	LnTA	Alodat *et al., (*2021) *and* Pourmansouri *et al., (*2022).	+/-
Gross domestic product (GDP)	(GDPn – GDPn-1)	*Khan, Bashir, Attuwaijri, and Khalid (2023)*	+
Interest rate (INT)	(i – P) ÷ (1 + P)	Ullah, (2020)	-
Inflation (INFL)	$(P_t) \div (P_{t-n})$	Maria & Hussain, 2023 and Ahmad *et* al., (2022)	+/-
Covid-19	Dummy variable, 1 for the Covid period, 0 for the non-Covid period.	Mabandla and Marozva (2025)	-

Source: Authors own compilation

3.1 Model Specification

The Generalised Method of Moments (GMM) was used in this research. The generic GMM dynamic technique has the following form:

$$Y_{it} = \alpha Y_{i\,t-1} + \beta X_{it} + \beta MEF_t + \mu_i + \varepsilon_{it} \quad (1)$$

Where:

$\boldsymbol{Y_{it}}$ indicates the financial performance metrics for firm *i* at time *t*; $\boldsymbol{X_{it}}$ is the explanatory variable vector for firm *i* at time *t*, signifying the variable unique to the firm. $\boldsymbol{\alpha}$ represent a coefficient for the lagged financial performance Metrix; *β* is the linear coefficient representing the relationship between each independent variable and the dependent variable; $\boldsymbol{MEF_t}$ is the macro-economic factors at time *t*; $\boldsymbol{\mu_i}$ indicates fixed effects in firms; $\boldsymbol{\varepsilon_{it}}$ it is a random error term; the subscript i indicates the cross-section, and t indicates the time-series scale. This study employed the two-step GMM system prediction model of Arellano and Bover (1995) and Blundell and Bond (1998), with dimension and lag parameters operating as instruments. The one-step GMM system method for forecasting is assumed to supplement the GMM estimate approach of Arellano and Bond (1991).

This study employs the system Generalised Method of Moments (GMM) estimator within a dynamic panel framework to examine the effect of liquidity on financial performance. The methodology addresses endogeneity concerns associated with reverse causality and unobserved firm-specific effects. Lagged values of the current ratio and firm size are used as internal instruments, supported by theoretical justification and temporal relevance. The validity of these instruments is confirmed through the Sargan and Hansen tests, whose non-significant results affirm instrument exogeneity and model robustness. By integrating sound econometric techniques with theoretically informed instrumentation, the study ensures consistent and efficient estimates, thereby reinforcing the credibility of the findings on the liquidity and performance relationship.

This paper solely employed South African data since it was our article's focus. This study investigated the important elements influencing financial performance in the South African firm by regressing financial performance (ROA, ROE, and TQ) against the components in the following questions 2 to 4.

$$\Delta \mathrm{ROA}_{\mathrm{it}} = (1-\alpha)\Delta \mathrm{ROA}_{\mathrm{it}-1} + \beta_1 \Delta \mathrm{LEV}_{\mathrm{it}} + \beta_2 \Delta \mathrm{LIQ}_{\mathrm{it}} + \beta_{\mathrm{j}} \sum_{\frac{j}{t}=1}^{n} \Delta MEF_t + \Delta\, \varepsilon_{\mathrm{it}} \qquad (2)$$

$$\Delta \mathrm{ROE}_{\mathrm{it}} = (1-\alpha)\Delta \mathrm{ROE}_{\mathrm{it}-1} + \beta_1 \Delta \mathrm{LEV}_{\mathrm{it}} + \beta_2 \Delta \mathrm{LIQ}_{\mathrm{it}} + \beta_{\mathrm{j}} \sum_{\frac{j}{t}=1}^{n} \Delta MEF_t + \Delta\, \varepsilon_{\mathrm{it}} \qquad (3)$$

$$\Delta \mathrm{TQ}_{\mathrm{it}} = (1-\alpha)\Delta \mathrm{ROA}_{\mathrm{it}-1} + \beta_1 \Delta \mathrm{LEV}_{\mathrm{it}} + \beta_2 \Delta \mathrm{LIQ}_{\mathrm{it}} + \beta_{\mathrm{j}} \sum_{\frac{j}{t}=1}^{n} \Delta MEF_t + \Delta\, \varepsilon_{\mathrm{it}} \qquad (4)$$

Where:

Δ is a differentiator,

$\boldsymbol{ROA_{B_{it}}}$ represents return on assets measured by EBIT over total assets,

$\boldsymbol{ROE_{B_{it}}}$ indicates return on equity measured by net profit divided by owner's profit,

$\boldsymbol{TQ_{B_{it}}}$ is the Tobin's Q measured by (total market value of company plus liquidity) divided by (Total asset value plus liabilities),

$\boldsymbol{LEV_{B_{it}}}$ Leverage :

D/E: Debt-equity measured by debt divided by equity,

LTD: Long-term debt to total assets measured by the long-term ratio divided by total assets,

TD: Total debt to total assets measured by the total debt ratio divided by total assets,

$\boldsymbol{LIQ_{B_{it}}}$ Liquidity:

CUR: current ratio measured by current assets divided by current liabilities

CR: Cash ratio measured by (cash plus marketable securities) divided by current liabilities,

FS: Firm size measured by the natural logarithm of total assets

ε_{it}: Error term

3.2 Descriptive statistics

The descriptive statistics reveal notable variation in firm-level financial performance and structural characteristics across the sample. The mean ROA was 7.25%, with a standard deviation of 12.04%, indicating moderate dispersion in firms' ability to generate profits from their asset base. The ROA ranged from a minimum of -37.88% to a maximum of 59.52%, reflecting the presence of both underperforming and highly efficient firms within the sample.

Table 2: Descriptive Statistics

Variables	Mean	Median	Maximum	Minimum	Std Dev	Skewness	Kurtosis	Jarque-Bera
ROA	7,25	4,17	59,52	- 37,88	12,04	0,95	5,15	11,95
ROE	15,61	15,05	657,18	- 483,65	46,92	3,85	138,32	26,63
TOBINQ	353,06	186,00	22 708,00	36,00	1 247,42	16,71	298,40	12,81
CUR	1,67	1,17	35,38	0,16	2,98	9,14	96,23	13,09
TDR	0,54	0,52	1,37	0,00	0,28	0,04	2,20	9,33
LTDR	0,36	0,37	0,96	0,00	0,25	0,24	1,97	18,71
RINT	9,29	9,38	11,75	7,00	1,30	- 0,13	2,51	4,36
RGDP'Billions	2 610,00	2 630,00	2 890,00	2 380,00	137,00	0,26	2,69	5,33
TA 'Billions	481,00	143,00	3,05	1,53	611,00	1,57	4,99	200,60
DE	4,20	1,16	288,97	0,00	16,10	16,10	283,51	11,56
INFL	5,33	5,45	7,00	3,20	1,12	- 0,18	2,12	13,20
CR	1,31	0,87	35,38	0,16	2,97	9,50	101,09	14,48

The ROE displayed substantially greater volatility, ranging from -483.65% to 657.18%. This pronounced variability underscores the sensitivity of ROE to changes in net income and equity capital, particularly in firms with thin equity buffers. The consistently higher magnitude of ROE values relative to ROA suggests that firms, on average, generate stronger returns for equity holders than for total assets, potentially driven by leverage. This aligns with theoretical expectations that equity returns are amplified in the presence of debt financing. Tobin's Q, which captures the ratio of market valuation to the replacement cost of assets, ranged from 36.00 to an extreme of 22,708.00, highlighting significant disparities in market-based firm valuation. Such outliers may be attributed to investor expectations of future growth, firm-specific intangible assets not reflected on balance sheets, or speculative market behaviour. In terms of liquidity, the CUR was 1.67, indicating that, on average, firms held current assets sufficient to cover 167% of their current liabilities.

The relatively low standard deviation suggests a narrower distribution of liquidity across firms compared to profitability and valuation measures. The CUR values ranged from a minimum of 0.16, indicative of severe short-term liquidity constraints, to a maximum of 35.38, which may reflect conservative working capital management or potential inefficiencies in asset utilisation. Financial leverage was assessed using three key indicators: the TDR, LTDR, and the DE. The mean TDR was 0.54, with a standard deviation of 0.28, indicating that, on average, 54% of firms' capital structures comprised debt financing. The TDR ranged from 0.00 to 1.37, reflecting substantial variation in firms' overall leverage. The LTDR had a mean value of 0.36 and a standard deviation of 0.25, with values ranging from 0.00 to 0.96, suggesting that long-term debt constituted a notable component of firms' liabilities.

The DE ratio recorded an average of 4.20 with a markedly high standard deviation of 16.10, ranging from 0.00 to 288.97, highlighting significant heterogeneity in the extent to which firms rely on equity relative to debt. These findings suggest that the firms in the sample are generally highly leveraged, albeit with considerable variability across the dataset. The mean for GDP was approximately ZAR2610.00 billion, with a standard deviation of ZAR137.00 billion. GDP values ranged from a minimum of ZAR2,380.00 billion to a maximum of ZAR2,889.00 billion. These figures suggest significant variation in GDP, which may have a substantial impact on firm performance. Firm size was proxied by total assets (TA). The mean TA was approximately ZAR481.00 billion, with a standard deviation of ZAR611.00 billion, ranging from a minimum of ZAR1.526.00 billion to a maximum of ZAR3.050.00 billion. The descriptive statistics indicate a considerable range in firm size, highlighting the potential association between company size and asset base.

The mean value of GDP was ZAR261.00 billion, with a standard deviation of R137.00 billion. GDP ranged from a minimum of ZAR2,380.00 billion to a maximum of ZAR2,889.00 billion. These statistics suggest substantial variation in GDP, which may significantly influence firm performance. Firm size was proxied by total assets (TA), measured using the natural logarithm to account for scale differences. The mean TA was ZAR481.00, with a standard deviation of ZAR611.00 billion. TA values ranged from a minimum of ZAR1,526.00 billion to a maximum of ZAR3,050.00 billion. These descriptive results indicate a wide distribution in firm size, underscoring the potential association between company size and asset base.

The average INFL was 5.33%, with a standard deviation of 1.12. Inflation ranged from a minimum of 3.20% to a maximum of 7.00%. Inflation serves as an important macroeconomic indicator reflecting price stability within a country. The mean for QR was 1.31 with a standard deviation of 2.97. CR values ranged widely from 0.16 to 35.38, indicating considerable variation in firms' liquidity positions. Analysis of skewness and kurtosis revealed the presence of asymmetry and leptokurtosis in the distributions of all variables under study. Furthermore, the Jarque-Bera test for normality confirmed that these variables are not normally distributed. The correlations between the variables are discussed in the subsequent section.

3.3 Correlation analysis

Correlation analysis, as presented in Table 3, illustrates the relationships between the independent and dependent variables utilised to evaluate firm performance.

Table 3: Correlation Analysis

Variables	ROA	ROE	TOBINQ	CR	TDR	LTDR	RINT	RGDP	TA	DE	INFL	QR
ROA	1											
ROE	0.2370***	1										
TOBINQ	0.1063*	-0.5234***	1									
CR	-0,0068	0.3012***	-0,0298	1								
TDR	-0,0568	-0.1025*	0.1204**	-0.3750***	1							
LTDR	-0,0151	-0.1868***	0.0984*	0.1314**	-0.2198***	1						
RINT	-0,0799	-0,0639	-0,0374	-0,0789	-0,0041	-0,0096	1					
RGDP	-0,0233	0,0126	-0.0923*	0,0567	0,0294	0,0271	0.6164***	1				
TA	-0.3697***	-0,0484	-0.1063**	-0.1889***	0.3488***	-0.3250***	0,0148	0.1314**	1			
DE	-0.1018*	-0.5786***	0.9378***	-0,0858	0.2582***	0,0106	-0,0433	-0,0748	0.1259**	1		
INFL	0,03	-0,0643	0,0258	-0,0084	0,0015	-0,0266	0.5148***	0.4039***	0,0141	0,0228	1	
CR	-0,0537	0.3040***	-0,0263	0.9920***	-0.3355***	0.1012*	-0,0791	0,0542	-0.1406***	-0,0621	-0,009	1

Return on Assets (ROA) exhibited a positive and statistically significant correlation with ROE. Additionally, ROA was positively and significantly associated with Tobin's Q, suggesting that the market anticipates improved firm performance due to enhanced supervisory mechanisms arising from the firm's social constraints.This expectation may explain why Tobin's Q responds more rapidly than ROA. Conversely, TA and DE were negatively and significantly correlated with ROA, indicating that larger firm size is associated with lower performance. ROE demonstrated a significant negative correlation with Tobin's Q, reflecting a strong inverse relationship and suggesting efficient market pricing of firm performance. In contrast, ROE was positively correlated, albeit weakly, with the CR. Furthermore, ROE was negatively associated with both the TDR and the LTDR. A similar negative and significant relationship were observed between ROE and DE. Notably, the CR showed a positive and statistically significant correlation with ROE.

Tobin's Q demonstrated a positive and statistically significant association with both the TDR and the LTDR, suggesting that elevated leverage levels are correlated with higher market valuation as captured by Tobin's Q. In contrast, Tobin's Q exhibited a significant negative relationship with Gross Domestic Product (GDP) and TA, implying that increases in macroeconomic output and firm size are associated with lower market valuation ratios. The subsequent section elaborates on the methodology and findings derived from the application of the Two-Step System Generalised Method of Moments (GMM) estimator.

4. Results

The results presented in Table 4 highlight a significant positive relationship between a firm's financial performance, measured by ROA, and its lagged value of ROA. This finding suggests that firms with higher ROA in earlier periods are likely to maintain better financial results in subsequent periods, indicating a strong capacity for performance sustainability. The research indicates a negative relationship, yet statistically insignificant, between DR and ROA. The lack of statistical significance implies that debt levels do not significantly affect immediate financial results within the context of this specific data set. The analysis reveals a negative and significant relationship between the LTDR and ROA. Specifically, the research suggests that a greater reliance on long-term debt financing is generally linked to a decrease in overall firm earnings, as indicated by the return on assets metric. This relationship supports the trade-off theory, which argues that the potential tax benefits of leveraging debt are countered by the risks of financial instability and limitations on management discretion. When long-term borrowing becomes excessive, it can negatively impact overall operational success (DeAngelo, Gonçalves & Stulz, 2021). The results are consistent with the findings of Kalash (2023), who finds a negative and significant association between leverage and firm financial performance. This study's results demonstrate a positive and statistically significant correlation between liquidity, as assessed through both the CUR and CR, and ROA. This suggests that improved liquidity positions empower firms to fulfill their financial commitments and capitalise on lucrative prospects (Bourke, 1989). Furthermore, a positive and significant relationship was observed between firm size and ROA, providing evidence for the economies of scale theory. This indicates that larger institutions may achieve greater operational efficiency and a more diversified risk profile (Athanasoglou, Brissimis & Delis, 2008). In contrast, interest rate levels exhibited a negative and significant association with ROA, implying that increases

in interest rates may elevate the cost of funding or suppress the demand for loans, thereby diminishing profitability (Demirgüç-Kunt & Huizinga, 1999).

Table 4: The effect of capital structure on ROA

	System GMM	System GMM	System GMM	System GMM
	Model 1	Model 2	Model 3	Model 4
Variables	**ROA**	**ROA**	**ROA**	**ROA**
L.ROA	0.367***	0.484***	0.646***	0.483***
	(0.0610)	(0.0300)	(0.0263)	(0.0391)
DR	-1.027		-0.690	
	(1.943)		(2.264)	
LTDR		-9.729***		-31.08***
		(1.996)		(1.115)
CUR	0.907***	0.402***		
	(0.0259)	(0.0294)		
CR			0.657***	0.599***
			(0.0189)	(0.0271)
LTA	16.92***	14.13***	22.14***	20.00***
	(1.053)	(0.619)	(0.625)	(0.482)
RINT	-1.742***	-1.696***	-1.462***	-1.360***
	(0.234)	(0.102)	(0.241)	(0.269)
LRGDP	-15.17	-20.81	-49.67***	-55.93***
	(7.827)	(13.37)	(6.005)	(11.89)
INFL	0.529***	0.476***	0.376***	0.481***
	(0.0680)	(0.0425)	(0.0698)	(0.134)
COVID_19	-2.264**	-1.863***	-2.392***	-1.310
	(0.752)	(0.269)	(0.498)	(0.675)
N	341	310	310	310
Groups	31	31	31	31
Instruments	40	44	35	46
R(1)	-3.00	-3.09	-3.25	-3.01
R(2)	-0.37	0.38	0.62	0.51
Sagan Test	176.25	114.06	98.70	112.85
Hansen Test	27.69	26.04	27.61	29.19

Robust Standard errors in parentheses * p < 0.05, ** p < 0.01, *** p < 0.001. In model 1, capital structure is measured as the total debt ratio (DR). Model 2, capital structure is measured as the long-term debt ratio (LTDR), and liquidity is measured as the current ratio (CR). Model 3, capital structure is measured as the total debt ratio (DR), and liquidity is measured as the quick ratio (CR). Model 4, capital structure is measured as the long-term total debt ratio (LTDR), and liquidity is measured as the quick ratio (CR).

Table 5 presents findings that reveal a negative and statistically significant relationship between ROE and its lagged value. This indicates that a high ROE in a prior period tends to predict a lower ROE in the current period, suggesting a trend towards mean reversion in profitability. In addition, the results of the study show a negative and significant correlation between LTDR and ROE. This implies that a greater reliance on long-term debt is associated with reduced returns for shareholders. Contributing factors may include higher interest costs, increase financial risk, and limited operational flexibility.

Table 5: The effect of capital structure on ROE

	System GMM	System GMM	System GMM	System GMM
	Model 1	Model 2	Model 3	Model 4
Variables	ROE	ROE	ROE	ROE
L.ROE	-0.471	-0.406***	-0.506***	-0.405***
	(0.409)	(0.0283)	(0.0164)	(0.0287)
DR	34.88		-49.47**	
	(23.11)		(18.23)	
LTDR		101.0**		114.3**
		(38.15)		(36.34)
CR	13.56**	11.57***		
	(4.702)	(0.358)		
CR			14.47***	11.63***
			(0.701)	(0.373)
LTA	68.49	120.8***	175.0***	120.8***
	(40.29)	(12.26)	(22.11)	(13.19)
RINT	3.542	1.519	2.735	1.724
	(7.564)	(2.656)	(1.623)	(2.680)
LRGDP	-353.0	-330.9***	-536.5***	-334.0***
	(229.5)	(82.16)	(54.50)	(81.52)
INFL	-0.659	0.441	0.185	0.305
	(3.681)	(1.389)	(0.910)	(1.416)
COVID_19	2.836	-4.352	-5.641	-4.102
	(19.25)	(6.056)	(4.336)	(6.158)
N	341	310	310	310
Groups	31	31	31	31
Instruments	28	24	24	24
R(1)	-0.35	-0.81	-0.76	-0.82
R(2)	-0.85	-1.12	-1.06	-1.13
Sagan Test	31.89	22.83	25.27	22.49
Hansen Test	19.37	18.44	27.08	19.07

Robust Standard errors in parentheses * p < 0.05, ** p < 0.01, *** p < 0.001. In model 1, capital structure is measured as the total debt ratio (DR), and liquidity is measured as the current ratio (CR). Model 2, capital structure is measured as the long-term debt ratio (LTDR), and liquidity is measured as the current ratio (CR). Model 3, capital structure is measured as the total debt ratio (DR), and liquidity is measured as the quick ratio (CR). Model 4, capital structure is measured as the long-term total debt ratio (LTDR), and liquidity is measured as the quick ratio (CR).

Theoretically, these findings align with the Pecking Order Theory (Myers & Majluf, 1984), which posits that companies prefer to use internal funding sources instead of debt financing. This preference helps them avoid the costs associated with borrowing and alleviates potential conflicts of interest between debtholders and equity holders. Excessive long-term leverage can hinder profitability, as the obligation to service debt may outweigh the benefits gained from investments financed through borrowing. These results support the findings of Omokore *et al* (2024), who also reported a negative and statistically significant relationship between LTDR and ROE.

The research reveals a significant positive correlation between liquidity metrics and profitability. Specifically, both the CUR, which measures general short-term liquidity, and the CR, a stricter indicator, show a statistically significant positive relationship

with ROE. This finding suggests that companies with a stronger short-term financial position, regardless of whether assessed broadly or narrowly, tend to deliver better returns for their shareholders. This outcome may be due to a lower risk of financial difficulties, greater operational reliability, and an improved ability to seize favourable investment opportunities (Lalithchandra & Rajendhiran, 2021). The findings are inconsistent with Nguyen *et al*. (2024), who report a negative relationship between liquidity and firm performance.

Table 6: The effect of capital structure on TobinQ

	System GMM	System GMM	System GMM	System GMM
	Model 1	Model 2	Model 3	Model 4
Variables	**TobinQ**	**TobinQ**	**TobinQ**	**TobinQ**
L.TobinQ	0.00624	0.0614***	0.117***	0.0628***
	(0.0844)	(0.0166)	(0.0179)	(0.0174)
DR	234.8		255.8	
	(266.7)		(262.1)	
LTDR		327.4		335.4
		(351.0)		(343.4)
CUR	42.21	43.72***		
	(41.68)	(11.50)		
CR			41.65***	44.51***
			(7.572)	(11.49)
LTA	655.6	1388.3***	1253.5***	1415.3***
	(512.8)	(359.5)	(213.3)	(353.1)
RINT	-239.1	-202.7***	-162.2***	-203.7***
	(209.2)	(34.34)	(38.44)	(34.16)
LRGDP	-806.7	-1823.1*	-2587.6***	-1763.8*
	(1485.0)	(756.9)	(509.6)	(773.0)
INFL	124.2	106.5***	90.14***	106.2***
	(104.3)	(18.72)	(22.32)	(18.81)
COVID_19	-684.0	-644.4***	-538.6***	-646.4***
	(539.9)	(112.3)	(121.4)	(112.5)
N	341	310	310	310
Groups	31	31	31	31
Instruments	28	24	24	24
R(1)	-0.14	-0.84	-1.18	-0.84
R(2)	-0.86	-0.17	-0.43	-0.17
Sagan Test	13.10	10.82	11.28	10.81
Hansen Test	26.23	20.84	17.18	20.70

Robust Standard errors in parentheses * p < 0.05, ** p < 0.01, *** p < 0.001. In model 1, capital structure is measured as the total debt ratio (DR), and liquidity is measured as the current ratio (CR). Model 2, capital structure is measured as the long-term debt ratio (LTDR), and liquidity is measured as the current ratio (CUR). Model 3, capital structure is measured as the total debt ratio (DR), and liquidity is measured as the quick ratio (CR). Model 4, capital structure is measured as the long-term total debt ratio (LTDR), and liquidity is measured as the quick ratio (CR).

The findings shown in Table 6 indicate a statistically significant positive correlation between Tobin's Q and its lagged value. In addition, the analysis reveals a positive, but statistically insignificant, relationship between the LTDR and Tobin's Q.

These results suggest that companies with higher levels of long-term debt may experience slightly increased market valuations; however, the evidence does not strongly support this relationship.

On the other hand, the results of the study revealed a positive and significant correlation between the current ratio and Tobin's Q. A comparable pattern was identified between the quick ratio and Tobin's Q, with a significant positive association evident. These observations imply that firms demonstrating greater liquidity typically experience elevated market valuations, as indicated by Tobin's Q (Myers, 1984; Almeida, Campello & Weisbach, 2004). This conclusion lends support to the Liquidity Preference Theory, which suggests that investors generally favour firms possessing sufficient liquidity. The rationale is that these entities are better positioned to satisfy immediate financial commitments and exploit potential investment avenues. This, in turn, mitigates the potential for financial instability and ultimately boosts the company's overall worth (Keynes, 1937; Opler, Pinkowitz, Stulz & Williamson,1999). The study's outcomes are, however, at odds with the recent research of Nguyen, Phan, and Hang (2024), who demonstrate a negative and significant connection between liquidity and firm performance.

5. Conclusion and policy implications

This study examined the impact of capital structure and liquidity on the financial performance of South African firms over the period 2012 to 2023. To address potential issues of correlation and bias commonly found in panel datasets, the study employed the Generalised Method of Moments (GMM) for estimation. The results showed a negative and significant relationship between the LTDR and firm profitability, as measured by ROA and ROE. This suggests that a higher reliance on long-term borrowing generally harms a company’s earnings and shareholder returns. Conversely, liquidity represented by the CUR and CR exhibited a positive and significant impact on financial performance across various measures, including ROA, ROE, and Tobin’s Q. These findings highlight that firms with better liquidity are more capable of meeting immediate financial obligations, seizing potential investment opportunities, and ultimately enhancing both their reported profitability and market value.

The results highlight the crucial importance of sound capital structure and liquidity management for firms operating within the South African economic landscape. The government initiatives could focus on enhancing access to immediate liquidity options, enabling firms to maintain operational continuity and pursue growth opportunities. Regulatory bodies and state organisations could also consider establishing programs to help firms improve their liquidity management skills, which could contribute to overall economic stability and a competitive edge. Moreover, the South African Reserve Bank may adopt a more expansionary monetary policy stance, which would lower interest rates and increase the money supply, thereby enhancing overall market liquidity. Such measures are expected to incentivize Johannesburg Stock Exchange (JSE)-listed firms to increase borrowing, thereby strengthening their liquidity positions.

Future research could benefit from examining the diverse aspects of capital structure and liquidity impacts across different sectors and organisational dimensions within the South African economy. By integrating broader economic indicators such as benchmark interest rates, inflation, and overall economic growth, researchers could gain a deeper understanding of how external economic conditions influence corporate financial strategies. Furthermore, studying the role of organisational leadership and executive decision-making in capital and liquidity management could provide valuable insights into the factors that contribute to organisational success. Lastly, evaluating the financial strategies implemented in the aftermath of the global health crisis may yield important observations on how organisations adapt their funding and liquid asset management practices in response to financial instability.

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