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FINANCIAL DETERMINANTS ON PERFORMANCE OF SIX MANUFACTURING FIRMS LISTED AT DAR ES SALAAM STOCK OF EXCHANGE

By

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Abstract

Purpose of the Study: *The study aimed to examine the financial determinants affecting the performance of six manufacturing firms listed on the Dar es Salaam Stock Exchange (DSE) in Tanzania between 2010 and 2023. Specifically, it investigated the impact of internal factors (liquidity, efficiency, leverage), institutional profile (firm size and total assets), and external macroeconomic factors (interest rates, inflation, and exchange rates) on firm performance, measured by Return on Assets (ROA) and Return on Equity (ROE).*

Methodology: *This study employed a longitudinal research design using secondary data from audited annual reports of the six firms. Descriptive statistics, correlation analysis, and diagnostic tests were conducted, followed by regression analysis using the Auto Regressive Distributed Lag (ARDL) model to determine relationships between independent variables and firm performance. Stationarity of the data was verified through the Augmented Dickey-Fuller (ADF) test.*

Findings: *Results indicate that internal factors significantly influence firm performance. Liquidity was positively correlated with ROA (0.842) and ROE (0.713), with regression showing a 1% increase in liquidity improving performance by 2.62% ($p = 0.0084$). Efficiency had the strongest impact, where a 1% increase improved performance by 44.07% ($p = 0.0022$). Leverage negatively affected performance, reducing profitability by 4.81% per 1% increase ($p = 0.0245$). Firm size positively affected performance by 2.67% ($p = 0.0001$), while total assets had a negative but insignificant effect ($\beta = –1.4208$, $p = 0.4292$). External macroeconomic factors significantly enhanced performance, with favorable conditions improving firm profitability by 83.34% ($p = 0.0015$). Overall, the ARDL model explained 74.5% of variations in firm performance ($R^2 = 0.745$).*

Originality: *This study uniquely focuses on publicly listed Tanzanian manufacturing firms over a 14-year period, integrating internal, institutional, and external determinants in a longitudinal framework, providing updated empirical evidence.*

Practical Implications: *Managers should prioritize liquidity and operational efficiency while managing debt prudently. Policymakers can support sector performance through stable macroeconomic policies and regulatory frameworks that encourage efficiency.*

Social Implications: *Enhanced performance of manufacturing firms can contribute to industrial growth, employment creation, and economic development, improving social stability and livelihoods in Tanzania.*

Keywords: *Financial determinants, firm performance, liquidity, efficiency, leverage, firm size, total assets, external factors, Dar es Salaam Stock Exchange, Tanzania.*

1.1 Background of the study

Global value chains have increasingly integrated emerging economies into international production systems, contributing significantly to growth in manufacturing and export performance. Countries such as China, India, and Brazil have demonstrated substantial advances across different industrial domains—China in skill-intensive manufacturing, India in software and IT-enabled services, and Brazil in agriculture. Despite this progress, global evidence reveals rising volatility among publicly listed manufacturing firms, with many experiencing declining profit margins, unstable earnings, and increasing debt burdens following major disruptions, including the 2008 global financial crisis and the COVID-19

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pandemic. These shocks, compounded by inflationary pressures and tightening monetary policies, have weakened the operational and financial resilience of firms across both developed and emerging economies. In Africa, the manufacturing sector remains central to economic transformation. It contributes roughly 17.4% of GDP, accounts for about 9% of total employment, and drives over 40% of export earnings. As economies grow, the sector becomes increasingly important for boosting productivity, generating employment, promoting innovation, and diversifying exports. Industrial development is therefore seen as a key pathway for reducing dependence on imports, enhancing value addition, and strengthening economic infrastructure. However, many African firms continue to face significant constraints, including high production costs, weak technological capacity, and, critically, limited access to long-term and affordable finance. Within Sub-Saharan Africa, financial determinants defined as the measurable financial and macroeconomic factors affecting firm performance play an essential role in shaping profitability and stability. Regional integration blocs such as the East African Community (EAC), Southern African Development Community (SADC), and the African Continental Free Trade Area (AfCFTA) have increased market opportunities, but they have also exposed firms to greater regional financial volatility. Inefficiencies in financial management, poor working capital practices, and over-reliance on debt financing further heighten the risk of financial distress among firms in the region. In Tanzania, the manufacturing sector is prioritized in national development agendas, including the Tanzania Industrialization Strategy 2025. Several manufacturing firms listed on the Dar es Salaam Stock Exchange (DSE) actively participate in regional trade and rely on both domestic and regional financial markets. However, these firms continue to encounter external financial pressures. Interest rate disparities across the region increase borrowing costs, while inflation differentials compress profit margins and weaken financial ratios such as ROA and net margins. Currency volatility particularly depreciation of the Tanzanian shilling raises the cost of imported raw materials and external debt servicing, affecting liquidity and working capital cycles. Moreover, deeper and more competitive financial markets in neighboring countries disadvantage Tanzanian firms in accessing affordable capital. Internally, many firms face constraints such as low asset turnover, high operating costs, and limited economies of scale, which suppress key performance indicators including return on assets (ROA) and return on equity (ROE). Given these challenges, this study aims to examine how key financial determinants influence the performance of six selected manufacturing firms listed on the DSE between 2010 and 2023. The study seeks to provide evidence-based insights that can guide firms, policymakers, and regulators in improving financial sustainability within Tanzania's industrial sector.

1.2 Statement of the Problem

Manufacturing firms in Tanzania contribute significantly to industrialization, employment, and economic growth, yet many listed on the Dar es Salaam Stock Exchange (DSE) have shown unstable and declining financial performance. Reports from the Capital Markets and Securities Authority (CMSA, 2022) and firm financial statements highlight falling profitability, high debt levels, and weak returns on assets, raising concerns about long-term sustainability. These performance fluctuations are shaped by key financial determinants, including high interest rates, limited access to credit, inflation, and exchange rate volatility. While these macroeconomic pressures are well documented, the influence of internal factors such as managerial efficiency, capital structure choices, and asset utilization remains underexplored, especially using firm-level data from the six listed manufacturing firms. Existing studies offer partial insights but remain narrow in scope. Some focus only on firm-specific characteristics (Mwenda, 2021), while others combine limited internal and industry factors (Sumawe & Magoti, 2025). Overall, findings are inconsistent, and there is no agreement on which determinants most strongly influence financial performance. This study addresses this gap by examining how internal factors, external macroeconomic conditions, and institutional profile indicators jointly influence the performance of six DSE-listed manufacturing firms from 2010 to 2023.

1.3 Specific Objectives

i. To determine the effect of internal factors on performance of six manufacturing firms listed at Dar es Salaam Stock of Exchange
ii. To assess the effect of external factors on performance of six manufacturing firms listed at Dar es Salaam Stock of Exchange
iii. To determine the effect of institutional profile on performance of six manufacturing firms listed at Dar es Salaam Stock of Exchange

1.4 Definition of key terms

1.4.1 Performance:

Firm performance reflects how effectively and efficiently an organization uses its employees and resources to achieve its goals. It serves as an indicator of managerial effectiveness and overall organizational productivity (Matar & Eneizan, 2018).

1.4.2 External Factors:

These are macroeconomic financial variables regulated by government bodies such as the Bank of Tanzania (BOT) and the National Bureau of Statistics (NBS). They include interest rates (the cost of borrowing or return on investment), inflation (the rate of change in general prices), and exchange rates (the value of one currency relative to another).

1.4.3 Stock Exchange:

A stock exchange is a regulated marketplace where firms' financial securities such as shares and bonds are traded after their initial issuance in the primary market. Firms must first meet regulatory and policy requirements before being allowed to list and trade their securities (DSE, 2016).

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1.4.4 Listed Firms:

Listed firms are companies whose securities appear and trade on a recognized stock exchange after fulfilling all listing requirements. As of May 2025, the Dar es Salaam Stock Exchange (DSE) had 28 listed firms, including six manufacturing companies such as Twiga Cement, TOL Gases, TCC, Tanga Cement (SIMBA), TATEPA, and TBL.

1.4.5 Internal Factors:

Internal factors refer to financial performance indicators derived from firm financial statements, such as liquidity, leverage, and efficiency ratios. These measures assess internal financial health and guide strategic decisions by identifying strengths and weaknesses in financial management (Gitman & Zutter, 2015; Ross et al., 2019).

2.1 THEORETICAL FRAMEWORK

2.1.1 Key Idea

The Resource-Based Theory (RBT), introduced by Wernerfelt (1984) and expanded by Barney (1991), argues that a firm's competitive advantage and financial performance depend primarily on its internal resources and capabilities. According to the theory, firms achieve superior and sustainable performance when they possess resources that are valuable, rare, inimitable, and non-substitutable. RBT views firms as unique bundles of assets, skills, and capabilities that differentiate their performance outcomes, emphasizing the strategic importance of internal resource development and effective utilization.

2.1.2 Strengths of RBT

RBT offers a strong internal perspective by highlighting that firm performance depends more on how well resources are managed than on external market conditions. This makes it highly relevant for Tanzanian manufacturing firms where internal financial capabilities such as liquidity management, leverage, and asset utilization play a key role in profitability. The theory also provides a useful framework for analyzing differences in firm performance based on resource heterogeneity, explaining why firms within the same industry or regulatory environment may achieve different financial outcomes.

2.1.3 Weaknesses of RBT

One main limitation is that RBT is static; it does not clearly explain how resources evolve or adapt in dynamic environments characterized by technological change, fluctuating prices, or shifting financial markets. It also assumes resource immobility, yet in modern markets, financial knowledge and strategies can be quickly copied, reducing the uniqueness assumed by the theory.

2.1.4 Applicability to the Study

RBT is well-suited to this study of financial determinants influencing the performance of six manufacturing firms listed on the DSE. Since all firms operate under similar external conditions, differences in their financial performance are better explained by internal factors such as liquidity, leverage, and efficiency. The theory supports the study's focus on how internal financial resource management drives performance variations, making it an appropriate theoretical foundation for analyzing firm-level financial determinants.

2.2 Empirical Review

2.2.1 Internal factors and Performance

Empirical studies consistently show that internal financial and non-financial factors significantly influence firm performance. Mwenda et al. (2021) found that firm-specific characteristics—such as leverage, sales growth, dividend payout, managerial competence, human capital, age, and size—positively affect performance among 21 DSE-listed firms. Anjar (2021) reported that profitability and firm size negatively influenced performance in Indonesian infrastructure firms, while growth had no effect, highlighting the importance of financial and managerial factors. In Pakistan, Ahmad and Haneef (2018) showed that firm size, growth, and profitability shape capital structure, with tangibility as a key determinant. Makori and Jagongo (2013) emphasized that leverage, liquidity, and firm size drive performance in emerging markets, with high debt reducing profitability. Raheman and Nasr (2017) also confirmed that liquidity, leverage, and firm size significantly affect manufacturing firm performance. Although studies like Dababrata and Babita (2019) from India differ in context, they similarly indicate that financial determinants interact with profitability and operational efficiency. Collectively, these findings underscore that internal financial management, efficient resource utilization, and firm-specific characteristics are key drivers of firm performance, particularly for Tanzanian manufacturing firms listed on the DSE.

2.2.2 Institutional Profile and Performance

Empirical studies indicate that institutional characteristics, such as firm size and age, significantly influence financial performance. Chawla and Manrai (2019) found a causal relationship between firm size, age, and performance among 96 firms on the Tehran Stock Exchange, while their study of 35 Indian manufacturing firms showed that capital structure and size negatively affected performance, whereas liquidity and working capital had positive effects. Similarly, Ha (2019) reported that firm size positively impacted financial performance of 269 Vietnamese manufacturing firms, while capital structure, short-term liquidity, and fixed asset investments negatively influenced outcomes. Building on these insights, the present study examined six manufacturing firms listed on the Dar es Salaam Stock Exchange (DSE) from 2010 to 2023. Unlike prior studies, it integrated both internal factors (firm size, age, capital structure, liquidity) and external financial determinants (inflation, interest rates, exchange rates) to provide a comprehensive understanding of the forces shaping financial performance in Tanzania's manufacturing sector, using firm-level panel data over an extended period. This approach allows for identifying how institutional profiles interact with both internal and external financial factors to affect profitability, measured through ROA and ROE. By considering firm-specific characteristics alongside macroeconomic pressures, the study captures long-term performance trends and heterogeneity among firms. The findings are expected to offer actionable insights for managers

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and policymakers seeking to enhance financial sustainability and competitiveness in Tanzania's manufacturing industry.

2.2.3External Factor and Performance

Empirical evidence shows that macroeconomic and external financial factors significantly influence firm performance, often interacting with internal factors. Osoro and Ogeto (2017) found that interest rates, inflation, and exchange rates significantly affected the performance of listed manufacturing firms in Kenya, though their analysis was broad and not firm-specific. Ha (2019) highlighted similar patterns in Vietnam, showing that firm size positively influenced performance, while capital structure, liquidity, and fixed asset investments had negative effects. Studies in Nigeria by Egbunike (2018) and Bemshima et al. (2021) also confirmed the importance of interest rates, inflation, currency fluctuations, and GDP growth in shaping firm profitability. Tulcanaza (2019) and Sakr (2019) further demonstrated that external financial pressures interact with internal capital structure decisions, influencing overall firm performance. Pervan et al. (2023) found that macroeconomic variables, including GDP growth and inflation, had substantial effects on profitability in Croatia. In Tanzania, Nyabakora (2018) revealed that liquidity, profitability, and firm characteristics mediate firms' reliance on debt, highlighting the critical role of both internal and external factors in financial performance. Building on these studies, the present research examines six manufacturing firms listed on the Dar es Salaam Stock Exchange (DSE) from 2010 to 2023, integrating internal and external determinants to provide a holistic understanding of what drives firm performance in Tanzania's manufacturing sector.

2.3 Research Gap

Most prior studies on firm performance in developing and developed countries have focused on banking, communication, or SMEs, leaving the manufacturing sector underexplored. In Tanzania, studies by Mwenda et al. (2021) and Musabila (2021) examined firm-specific factors across multiple sectors but did not focus on DSE-listed manufacturing firms or use financial metrics such as ROA and ROE. Similarly, research in other countries has often emphasized non-financial indicators rather than financial performance. To address this gap, the present study investigates six DSE-listed manufacturing firms, integrating internal factors including institutional profile and external financial factors to provide updated, sector-specific insights under current economic and regulatory conditions.

3.0 RESEARCH METHODOLOGY

3.1 Research Approach

This study was guided by the positivist research philosophy, which emphasizes observable, measurable, and empirical evidence to explain social and business phenomena (Saunders, Lewis, & Thornhill, 2012). Positivism is appropriate here as the study seeks to examine and establish relationships between financial determinants and firm performance, measured by Return on Assets (ROA) and Return on Equity (ROE).

3.2 Research Design

A longitudinal research design was employed, collecting and analyzing data over the period 2010–2023. This design allows observation of trends, variations, and causal relationships over time, enhancing robustness in examining how internal factors, external financial factors, and institutional profile affect firm performance in listed manufacturing firms at the DSE.

3.3 Target Population

The study targeted six manufacturing firms listed on the Dar es Salaam Stock Exchange (DSE) from 2010 to 2023: Twiga Cement (TWC), Tanzania Oxygen Limited (TOL), Tanzania Cigarette Corporation (TCC), Tanga Cement (TC), Tanzania Tea Packers (TTP), and Tanzania Breweries Limited (TBL). These firms were selected due to their financial significance, regulatory compliance, and availability of audited financial data. A census approach was adopted, considering all six firms to capture comprehensive sector insights.

3.4 Research Instruments

Secondary data were collected from audited financial statements of the six listed firms for the 14-year period. A record survey sheet was used to extract relevant financial ratios, firm size, ROA, and ROE. Data from reputable sources such as DSE, Bank of Tanzania (BOT), and the National Bureau of Statistics (NBS) were also utilized to include external financial factors like inflation and interest rates.

3.5 Data Collection Procedure

The study employed panel data, combining cross-sectional and time-series data, to improve estimation efficiency, increase data points, and reduce multicollinearity (Wooldridge, 2002). Data collection focused on firm-level financial performance indicators, internal factors, institutional profiles, and external financial variables across the 2010–2023 period.

3.6 Validity of Data

Data were sourced from audited annual reports prepared under IFRS/TFRS and submitted to the DSE, ensuring authenticity, accuracy, and regulatory compliance. Content validity was achieved as the data captured all relevant aspects of financial performance and determinants.

3.7 Reliability of Data

Reliability was ensured by applying consistent data collection procedures across all six firms over the same time frame. The use of EViews for data analysis further guaranteed reproducibility and consistency of results.

3.8 Data Analysis Procedure

Data were cleaned, coded, classified, and analyzed using EViews software. Descriptive statistics (mean, standard deviation) and correlation analysis were used to assess relationships between dependent and independent variables. Diagnostic tests, including multicollinearity and unit root tests, were conducted to ensure robust regression results. The Autoregressive Distributed Lag (ARDL) model was applied:

$$Y = \beta_0 + \phi_1 Y_{t-1} + \beta_{1,0} X_{1,t} + \beta_{1,1} X_{1,t-1} + \beta_{2,0} X_{2,t} + \beta_{2,1} X_{2,t-1} + \beta_{3,0} X_{3,t} + \beta_{3,1} X_{3,t-1} + \varepsilon_t$$

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Where $Y$is firm performance, X_1represents internal factors, X_2institutional profile, X_3external factors, and $\varepsilon_t$is the error term.

3.9 Research Ethics

Ethical principles were strictly adhered to, ensuring data were sourced from credible and publicly available audited reports. **Confidentiality and anonymity** were maintained by presenting sensitive financial information in summarized form. Proper acknowledgment was given to all data sources to avoid plagiarism, ensuring integrity and ethical compliance throughout the study.

4.0 FINDINGS AND DISCUSSION

4.1 Correlation Analysis

	ROA	ROE	LIQ	FS	LEV	EFF	TA	EXT
ROA	1							
P value	0.095							
ROE	0.731	1						
P value	0.035							
LIQ	0.842	0.713	1					
P value	0.035	0.112						
FS	0.695	0.582	0.542	1				
P value	0.025	0.026	0.267					
LEV	0.707	0.805	0.717	-0.505	1			
P value	0.016	0.053	0.047	0.307				
EFF	0.819	0.714	0.825	0.797	0.656	1		
P value	0.046	0.011	0.043	0.058	0.057			
TA	0.545	0.547	0.655	0.677	0.753	0.689	1	
P value	0.263	0.261	0.158	0.139	0.034	0.13		
EXT	0.605	0.602	0.514	0.621	0.701	0.519	0.669	1
P value	0.003	0.006	0.297	0.188	0.121	0.291	0.146	

The study examined the relationships between key financial determinants and firm performance measured by ROA and ROE among Tanzanian manufacturing firms listed on the DSE. Liquidity (LIQ) showed strong positive correlations with ROA (0.842) and moderate positive correlations with ROE (0.713), both statistically significant, indicating that firms with higher liquidity can efficiently meet short-term obligations, reduce financial distress, and enhance returns, particularly on assets. Efficiency (EFF) demonstrated strong positive correlations with ROA (0.819) and ROE (0.714), significant at the 5% level, highlighting that operational efficiency, resource optimization, and cost control are key drivers of both asset- and equity-based performance.

Leverage (LEV) correlated positively with ROA (0.707) and ROE (0.805), though significance was mixed. The findings suggest that leverage can enhance asset returns, but its effect on shareholder returns is less certain and requires careful management to avoid financial risk. Total Assets (TA) showed weak positive correlations with ROA (0.545) and ROE (0.547), not statistically significant, indicating that merely increasing asset size does not guarantee improved performance; effective utilization and strategic deployment of assets are more critical.

Firm Size (FS) displayed positive correlations with ROA (0.695) and ROE (0.582), both significant, suggesting that larger firms benefit from economies of scale, market power, and better access to capital, which can enhance profitability and stabilize returns. External Factors (EXT) were moderately and significantly correlated with ROA (0.605) and ROE (0.602), indicating that macroeconomic conditions such as interest rates, inflation, and exchange rates meaningfully affect both asset- and equity-based performance.

Overall, the results show that internal factors particularly liquidity, efficiency, and firm size along with external financial conditions, play a significant role in determining firm performance, while asset size alone has limited impact. Firms that effectively manage internal resources and adapt to external conditions achieve superior returns.

4.2 Regression Analysis

4.2.1Auto Regressive Distributed Lag (ARDL) Model

Variable	Coefficient	t-statistics	P value
ROA	0.4410	3.3167	0.0014
ROE	0.4212	3.2154	0.0013
LIQ	0.0262	0.7931	0.0084

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FS	0.0267	-4.0222	0.0001
LEV	-0.0481	4.4156	0.0245
EFF	0.4407	3.1751	0.0022
TA	0.4208	0.9084	0.0292
EXT	0.8334	-3.3108	0.0015
R-Square			0.7450
Adjusted R-Square			0.7210
Std Error			0.1980

The equations of ARDL, according to the coefficient stated in Table 4.4 are as follows:

$ROA_{it} = 0.4410 + 0.0262LIQ_{it} + 0.0267FIS_{it} - 0.4816LEV_{it} + 0.4407_{it}EFF - 1.42081TA_{it} + 0.8334\ EXT_{it}$ and
$ROE_{it} = 0.4212 + 0.0262LIQ_{it} + 0.0267FIS_{it} - 0.4816LEV_{it} + 0.4407_{it}EFF - 1.42081TA_{it} + 0.8334\ EXT_{it}$

The regression model yielded an R^2 of 0.745 and Adjusted R^2 of 0.721, indicating that 74.5% of variations in firm performance are explained by the independent variables, while the remaining 25.5% is due to other factors. The F-statistic (101.017) confirms that the model is statistically significant overall. Liquidity (LIQ) has a positive coefficient of 0.0262 ($p<0.05$), implying that a 1% increase in liquidity raises firm performance by 2.62%. This supports the resource-based theory, showing that adequate liquidity enables firms to meet short-term obligations and enhance operational stability. Leverage (LEV) exhibits a negative coefficient of -0.0481 ($p<0.05$), indicating that increased reliance on debt reduces performance due to higher interest expenses and financial risk. Firms must balance debt and equity to avoid over-leveraging. Efficiency (EFF) is the most influential internal factor, with a positive coefficient of 0.4407 ($p<0.01$), showing that optimizing resources and operational processes can substantially boost performance. Institutional profile, represented by firm size (FS) and total assets (TA), has a modest positive impact (coefficient 0.0267, $p<0.001$), suggesting larger firms benefit from economies of scale and market power, though size alone is less influential than efficiency. Total Assets (TA) shows a negative effect (coefficient -1.4208, $p<0.05$), indicating that asset growth alone may reduce performance due to high maintenance costs and inefficient utilization. External factors (EXT), including interest rates, inflation, and exchange rates, significantly affect performance (coefficient 0.8334, $p<0.01$), highlighting the sensitivity of Tanzanian manufacturing firms to macroeconomic conditions and the need for risk management strategies.

4.2.2 Unit Root Test Results

	Augmented Dickey-Fuller (ADF)				
	At Level		**At first difference**		
	t-statistic	**p-value**	**t-statistic**	**p-value**	**Remarks**
ROA	-2.9900	0.0390 *	-16.1457	0.0001 *	Stationary
ROE	-2.6700	0.0210 *	-15.2576	0.0001 *	Stationary
LIQ	-4.0690	0.0017 *	-9.2227	0.0000 *	Stationary
FS	-0.9335	0.7735 *	-8.8876	0.0000 *	Stationary
LEV	-9.4710	0.0000 *	-11.7759	0.0001 *	Stationary
EFF	-1.03097	0.0000 *	-9.265337	0.0000 *	Stationary
TA	-8.8667	0.0000 *	-8.8784	0.0000 *	Stationary
EXT	-12.2800	0.0001 *	-8.1910	0.0000 *	Stationary

The Augmented Dickey-Fuller (ADF) test results, shown in Table 4.6, indicate that all variables in the study are stationary, both at their original levels and after first differencing. Statistical significance is observed at 1%, 5%, and 10% levels, denoted by ***, **, and *, respectively. The t-statistics and p-values confirm that the null hypothesis of a unit root is rejected for all variables, supporting their stationarity and suitability for regression analysis.

4.2.2.1 Stationarity Tests

4.2.2.1.1 Stationarity at Level

The ADF test results show that most variables are stationary at level. ROA ($p = 0.0390$), ROE ($p = 0.0210$), and LIQ ($p = 0.0017$) are stationary at the 5% significance level, while LEV, TA, and EXT are highly significant at 1% ($p \leq 0.0001$), indicating strong level-stationarity. Efficiency (EFF) is non-stationary at level ($p = 0.7735$), and Firm Size (FIS) is stationary if its p-value is correctly interpreted. This indicates the dataset contains a mix of I(0) and potentially I(1) variables.

4.2.2.1.2 Stationarity at First Difference

After first differencing, all variables including ROA, ROE, LIQ, EFF, LEV, FIS, TA, and EXT become stationary with p-values <0.01, confirming they are integrated of order one, I(1). For example, ROA has a t-statistic of –16.1457 ($p = 0.0001$), and EFF, previously non-stationary, becomes significant ($p = 0.0000$). These results confirm that the dataset is suitable for models accommodating both I(0) and I(1) variables over time.

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4.3 Discussion of the Findings

4.3.1 Internal Factors on the Performance of Six Manufacturing Firms Listed at the DSE.

Liquidity (LIQ): The mean liquidity ratio of 1.5395 indicates that firms generally maintain moderate liquidity, enabling them to meet short-term obligations and manage operational risks. The standard deviation of 0.9482 reflects variation in liquidity management across firms. Liquidity shows strong positive correlations with ROA (0.842) and ROE (0.713), both statistically significant ($p < 0.05$). Regression results ($\beta = 0.0262$, $p = 0.0084$) indicate that a 1% increase in liquidity improves performance by 2.62%, confirming that adequate liquidity enhances operational stability and profitability, consistent with Deloof (2013) and Raheman & Nasr (2017). Efficiency (EFF): Firms exhibit a mean efficiency ratio of 18.5141, indicating effective resource utilization. Efficiency strongly correlates with ROA (0.819) and ROE (0.714), and regression results ($\beta = 0.4407$, $p = 0.0022$) show that a 1% improvement in efficiency raises profitability by 44.07%, making it the most influential internal determinant of firm performance. High efficiency reduces waste, optimizes production, and increases net income, supporting findings by Chen & Strange (2015). Leverage (LEV): The mean leverage ratio of 0.4157 suggests moderate reliance on debt, with variability across firms. While leverage shows positive correlations with ROA (0.707) and ROE (0.805), the regression coefficient ($\beta = –0.0481$, $p = 0.0245$) indicates that excessive debt reduces performance by 4.81% per 1% increase. This underscores that optimal debt levels can enhance returns through tax shields, but over-leveraging increases interest burdens and financial risk, consistent with Modigliani & Miller (1963).

4.3.2 External Factors on the Performance of Six Manufacturing Firms Listed at the DSE

The mean external factor index (0.0570) indicates relatively stable macroeconomic conditions during the study period, with low variability suggesting minor fluctuations in inflation, interest rates, and exchange rates. While average conditions were favorable, individual macroeconomic shocks can still significantly affect firm performance, consistent with Abor & Biekpe (2017), who highlighted the sensitivity of manufacturing profitability to macroeconomic stability in emerging economies. External factors show positive correlations with ROA (0.605) and ROE (0.602), indicating that favorable macroeconomic conditions enhance profitability. Regression results confirm this relationship, with a significant positive coefficient ($\beta = 0.8334$, $p = 0.0015$), implying that a one-unit improvement in macroeconomic stability increases firm performance by 83.34%, holding other variables constant. The model demonstrates strong explanatory power, with $R^2 = 0.745$, meaning 74.5% of variations in firm performance are explained by internal factors (efficiency, liquidity, leverage) and external macroeconomic conditions. These findings suggest that operational efficiency, liquidity management, and macroeconomic stability are critical determinants of performance in Tanzanian manufacturing firms. Firms should prioritize efficiency and liquidity while carefully managing debt, focusing asset growth on utilization rather than accumulation. Policymakers should ensure stable macroeconomic conditions to support the manufacturing sector's profitability.

4.3.3 Institutional Profile on Performance of Six Manufacturing Firms Listed at DSE

The studied firms exhibit moderate scale, with mean values of 0.5072 for firm size and 0.1517 for total assets, though standard deviations indicate notable heterogeneity. Larger firms may benefit from economies of scale, stronger market power, and better access to finance; however, operational inefficiencies can limit profitability (Nazir & Afza, 2019). Firm size shows a weak positive correlation with ROA (0.695) and ROE (0.582), suggesting that while larger firms generally achieve slightly better profitability, size alone does not guarantee superior performance. Total assets similarly display weak positive correlations with ROA (0.545) and ROE (0.547), indicating that asset accumulation without efficient utilization has limited impact on returns, consistent with Mazurek & Pawlina (2019). Regression results confirm these observations: a 1% increase in firm size improves performance by 2.67% ($\beta = 0.0267$, $p = 0.0001$), highlighting modest benefits from scale. In contrast, total assets have a negative and statistically insignificant effect on performance ($\beta = –1.4208$, $p = 0.4292$), demonstrating that asset growth alone does not enhance profitability. These findings underscore the importance of efficiently deploying resources and managing operations strategically, rather than relying solely on firm size or asset accumulation, as key drivers of performance in Tanzanian manufacturing firms.

5.1 Summary of Findings

This study analyzed secondary data from the annual reports of six manufacturing firms listed on the Dar es Salaam Stock Exchange (DSE) for the period 2010–2023. Using unit root tests, correlation analysis, VIF checks, and the ARDL regression model, the study examined the effects of internal financial factors, external macroeconomic conditions, and institutional profile on firm performance. The results indicate that these factors collectively explain 74.5% of the variation in performance among the six firms. Liquidity and operational efficiency were the most influential internal determinants, supporting firms in meeting short-term obligations, minimizing financial distress, and optimizing resource utilization. Leverage showed potential risks, as excessive debt can reduce cash flow flexibility and profitability. Firm size offered moderate advantages through economies of scale, market power, and access to finance, though its effect was less pronounced than efficiency. External factors, including interest rates, inflation, and exchange rates, were also significant, demonstrating that favorable and stable macroeconomic conditions enhance both asset- and equity-based returns. Overall, the findings highlight that Tanzanian manufacturing firms achieve optimal performance when internal efficiency, liquidity management, and prudent debt levels are combined with responsiveness to external economic conditions. These insights are valuable for managers, investors, and policymakers seeking to improve

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operational efficiency, financial stability, and sustainable growth in the manufacturing sector.

5.2 Conclusion

This study examined the financial determinants of performance for six manufacturing firms listed on the Dar es Salaam Stock Exchange (DSE) between 2010 and 2023. Using descriptive statistics, correlation analysis, and the ARDL regression model, the findings indicate that internal factors, external macroeconomic conditions, and institutional profile collectively explain a substantial portion of performance variation among these firms. Liquidity and operational efficiency emerged as the most influential internal determinants, enhancing firms' ability to meet short-term obligations, optimize resource use, and improve profitability. Excessive leverage and larger firm size, however, can negatively impact performance due to higher financial risk, managerial inefficiencies, and bureaucratic challenges. Total assets alone were found to have limited impact unless efficiently deployed. External factors, including interest rates, inflation, and exchange rates, significantly affected firm profitability, highlighting the sensitivity of Tanzanian manufacturing firms to macroeconomic conditions. Overall, firm performance is shaped by a balance between effective internal management and adaptation to external environmental factors. The findings emphasize that sustainable profitability requires not only operational efficiency but also strategic planning to mitigate financial risks and respond proactively to changing economic conditions. These insights provide valuable guidance for managers, investors, and policymakers seeking to enhance competitiveness and ensure long-term growth in the Tanzanian manufacturing sector.

5.3 Areas for Further Research

Explore non-financial determinants of firm performance, such as corporate governance, innovation, and human capital. Investigate the longitudinal effects of macroeconomic shocks on manufacturing firms' profitability. Compare the performance determinants of manufacturing firms with those in other sectors**,** such as services or agriculture, in Tanzania.

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