Available online at
https://journal.uitm.edu.my/ojs/index.php/jibe

ISSN: 2550-1429 (Online)

Vol. 11 No. 2 (2026)

Journal of International Business, Economics and Entrepreneurship

Market Capitalization and Corporate Performance Across Economic Disruption: Evidence from Manufacturing Firms on the Dar es Salaam Stock Exchange

Abraham Charles Nathanael*, Alex Reuben Kira, Anastasia R. Njiku

Department of Accounting and Finance, University of Dodoma, Tanzania

*Corresponding author:
E-mail: charlesabraham39@gmail.com
ORCID iD: https://orcid.org/0009-0003-3734-9636

ARTICLE INFO

Article history:
Received 9 July 2026
Accepted 1 October 2026
Published 30 October 2026

Keywords:
Market Capitalization
Financial Performance
Manufacturing Firms
Dar es Salaam Stock Exchange

DOI
https://doi.org/10.24191/jibe.v11i2.12587

ABSTRACT

This study examined the relationship between market capitalization and financial performance in pre-pandemic, pandemic and post-pandemic periods for manufacturing firms listed on Dar es Salaam Stock Exchange (DSE). The study adopted a quantitative longitudinal panel design using an unbalanced panel of 126 firm-quarter observations from seven listed manufacturing firms for the period 2018–2023. Financial performance was measured using Return on Assets (ROA). Market capitalization was measured as the natural logarithm of the quarter-end share price multiplied by ordinary shares outstanding. Firm size and leverage were included as control variables. The study used a fixed-effects estimation following the Hausman specification test, while Driscoll–Kraay standard errors were used to deal with heteroskedasticity and cross-sectional dependence. An interaction between market capitalization and pandemic phase was used to examine whether the association differed across periods. The findings show a positive and statistically significant association between market capitalization and ROA across the three pandemic phases. The estimated association is strongest in the post-pandemic period. However, evidence of differences across phases is sensitive to the inference method. Wild-cluster bootstrap results do not confirm significant differences in the market capitalization–ROA relationship across the phases, while a one-quarter lag specification produces positive but statistically insignificant estimates. The study therefore provides stronger evidence of a positive contemporaneous association between market capitalization and financial performance than of systematic phase differences. The findings provide context-specific evidence consistent with Signaling Theory by suggesting that the informational role of market valuation may vary with economic conditions. Firms should strengthen financial reporting and investor relations, while investors should interpret market capitalization alongside firm-specific and prevailing economic conditions.

1. Introduction

Market capitalization is an important market-based measure that reflects investors' valuation of a listed firm. It is determined by the market price of shares and the number of shares outstanding and therefore differs from accounting-based measures of firm size, such as total assets or sales. It also differs from financial performance measures such as Return on Assets (ROA), which reflects the ability of a firm to generate profit from its asset base, and market capitalization may therefore contain information about investors' expectations of the financial position, growth prospects, and future performance of a firm (Jang et al., 2018; Roosmawarni et al., 2022).

Signaling Theory provides one explanation for why market valuation may be associated with financial performance. When information is unevenly distributed between managers and outside investors, observable market information may help investors assess the prospects of a firm (Spence, 1973). Market capitalization may act as one such observable indicator because it incorporates investors' valuation through the share price. Its informational role may become more important during periods of high uncertainty, when investors have greater difficulty assessing firm prospects using conventional information. The COVID-19 provides an important setting for examining this argument because it disrupted production, supply chains, financial markets, and consumer demand while increasing uncertainty about future firm performance (Ding et al., 2021; Sharma et al., 2023).

But the relationship between market capitalization and accounting performance is not necessarily a one-way street. Higher market valuation can be associated with better access to external finance, market visibility and investor confidence, which can support firm operations. At the same time, profitable firms may receive higher market valuations because investors incorporate observed and expected profitability into share prices. Market capitalization and ROA may also respond jointly to other firm-specific or economic factors. The observed relationship may therefore reflect reverse causality, simultaneity, or common determinants rather than a simple causal effect running from market capitalization to financial performance. For this reason, the present study examines the association between market capitalization and ROA and how that association varies across economic conditions rather than assuming an unambiguous causal direction.

The economic environment may be particularly important for this relationship. The evidence from prior studies is mixed. Some studies have found positive associations between market capitalization or market position and corporate outcomes, especially where firms benefit from investor confidence and access to finance (Ateka & Kariuki, 2018; Danaila & Cosmulese, 2023; Halling et al., 2020; Joshi & Joshi, 2023). Other studies have found weak, insignificant, or context dependent relationships (Koila et al., 2018; Pavone, 2019). These differences suggest that estimating one average relationship over a long period may conceal changes associated with major economic disruptions.

This issue may be especially relevant in a frontier capital market such as Tanzania. The Dar es Salaam Stock Exchange is relatively small and less liquid than developed capital markets and information asymmetry remains an important feature of the market (Sylidion et al., 2025). In such an environment, limited trading and market liquidity may affect the extent to which share prices incorporate firm information. As a consequence, market capitalization may not have the same informational content across economic conditions. This creates a theoretical and empirical question that goes beyond the simple absence of Tanzanian studies: does the association between market valuation and accounting performance change when uncertainty alters the information environment in which investors and firms operate?

Existing research provides limited evidence on this question because much of the literature examines market capitalization and firm performance using an average relationship over the study period. This approach does not show whether the association changes between relatively normal conditions, severe

economic disruption, and subsequent recovery. Examining the pre-pandemic, pandemic, and post-pandemic periods therefore provides an opportunity to assess whether the informational relevance of market capitalization is state-dependent rather than constant.

Accordingly, this study examines the association between market capitalization and ROA among manufacturing firms listed on the Dar es Salaam Stock Exchange across the pre-pandemic (2018–2019), pandemic (2020–2021), and post-pandemic (2022–2023) periods. Specifically, it addresses two questions: (i) is market capitalization associated with ROA among DSE-listed manufacturing firms? and (ii) does this association differ across the three pandemic phases? By applying an interaction-based panel-data approach, the study contributes to the literature by testing whether the relationship between a market-based valuation measure and accounting performance changes with the economic and information environment in a frontier capital market.

2. Literature Review

2.1 *Signaling Theory*

Signaling Theory, developed by Spence (1973), explains how observable signals can reduce information asymmetry between parties with different levels of information. In corporate finance, managers generally possess more information about a firm's financial condition and prospects than outside investors. Investors therefore rely on observable information when assessing the quality and prospects of firms (Miller & Rock, 1985; Spence, 1973).

In this study, market capitalization is considered a market-based valuation indicator rather than a direct measure of firm size or financial performance. Since market capitalization depends partly on share price, it reflects investors' collective assessment of available information about a firm. A higher market valuation may therefore be associated with stronger investor confidence, financing opportunities, and expectations about future performance. However, the signalling relationship may also operate in the opposite direction because stronger financial performance can influence investors' expectations and consequently market valuation. Thus, Signaling Theory supports an association between market capitalization and financial performance but does not, by itself, establish a one-way causal relationship.

The informational role of market valuation may also vary with economic conditions. During periods of heightened uncertainty, investors may reassess firm information as expectations and perceived risks change. Consequently, the association between market capitalization and financial performance may differ across stable, crisis, and recovery periods. Signaling Theory therefore provides the theoretical basis for examining whether the relationship between market capitalization and ROA varies across the pre-pandemic, pandemic, and post-pandemic phases.

2.2 *Empirical Review of Market Capitalization and Financial Performance*

Evidence from other emerging and African capital markets also shows that the relationship between market capitalization and financial performance varies across contexts. Jeanluc & Muiruri (2022) examined listed firms in Rwanda and reported a relationship between stock market capitalization and financial performance. Similarly, Jagannathan & Khan (2019) examined factors associated with market capitalization among listed manufacturing firms in India, highlighting the relevance of firm financial characteristics in explaining market valuation. Almumani & Almazari (2024) found that ROA had a positive but weak effect on market capitalization among listed insurance companies in Jordan. During the COVID-19, Nurhayati et al. (2021) further showed that the performance of large-market-capitalization stocks was affected by the crisis environment. More recently, Muna et al. (2026) provided evidence from the Dar es Salaam Stock Exchange that accounting information is relevant to stock market performance, including market capitalization. These findings reinforce the view that the relationship between market

valuation and financial performance may depend on firm characteristics, market conditions, and the prevailing economic environment.

The relationship may also vary during periods of economic uncertainty. Halling et al. (2020) showed that financing conditions differed considerably across firms during the COVID-19, while Joshi and Joshi (2023) reported a positive relationship between market capitalization and financial performance during periods of financial stress. These findings indicate that the association between market valuation and firm outcomes may depend on prevailing economic and financing conditions. During periods of uncertainty, changes in investor expectations and perceived risk may alter the information reflected in market valuations.

Other studies provide less consistent evidence. Koila et al. (2018) found that market capitalization was not always associated with improved financial performance, particularly where information asymmetry affected developing capital markets. Similarly, Pavone (2019) showed that market capitalization alone does not adequately explain profitability because financial outcomes also depend on operational, managerial, and broader economic factors. These findings suggest that market valuation and accounting performance may share common determinants and that their relationship can vary across firms and economic environments.

The mixed empirical evidence therefore raises an important issue concerning the stability of the market capitalization–performance relationship over time. Much of the existing literature estimates an average relationship over the observation period, which may conceal changes associated with major economic disruptions. Less attention has been given to whether the relationship between market capitalization and accounting performance changes between stable conditions, systemic crisis, and subsequent recovery. This limitation is particularly relevant in frontier capital markets, where relatively low market liquidity and information asymmetry may affect the information incorporated into share prices. Accordingly, examining the pre-pandemic, pandemic, and post-pandemic periods allows the present study to test whether the association between market capitalization and ROA is phase-dependent rather than constant over time.

2.3 *Hypothesis Development*

Signaling Theory suggests that market-based information can become relevant to investors when assessing firm prospects under information asymmetry. Market capitalization reflects investors' valuation of a firm through its share price and shares outstanding and may therefore be associated with accounting performance. Firms with stronger market valuations may have greater market visibility and financing opportunities, while stronger financial performance may itself contribute to higher valuation. Accordingly, the expected relationship is positive, although it should be interpreted as an association rather than an assumed one-way causal effect.

H1: Market capitalization is positively associated with the Return on Assets of manufacturing firms listed on the Dar es Salaam Stock Exchange.

The strength of this association may vary with economic conditions. During the COVID-19, uncertainty increased and firms faced disruptions in financing, production, demand, and supply chains (Ding et al., 2021; Halling et al., 2020). Under such conditions, investors may place greater weight on observable market information when assessing firm resilience and prospects. From a signalling perspective, this implies that the association between market capitalization and financial performance may become stronger when uncertainty and information asymmetry increase.

H2: The association between market capitalization and Return on Assets differs between the pre-pandemic and pandemic periods.

As economic conditions move from crisis to recovery, uncertainty may decline and investors may again rely on a broader range of firm-specific information. The informational importance attached to market capitalization may therefore change from its crisis-period level. However, theory does not provide an unambiguous basis for predicting whether the post-pandemic association must become weaker or stronger because recovery conditions may differ across firms and markets. The post-pandemic relationship is therefore examined as a phase difference rather than imposing an unsupported directional expectation.

H3: The association between market capitalization and Return on Assets differs between the pandemic and post-pandemic periods.

2.4 Conceptual Framework

Figure 1 summarizes the relationships examined in this study. Market capitalization is the main explanatory variable, while ROA represents financial performance. Firm size and leverage are controlled for because differences in these firm characteristics may also be associated with ROA. The framework separates the study period into pre-pandemic, pandemic, and post-pandemic phases to examine whether the market capitalization–ROA relationship changes with economic conditions.

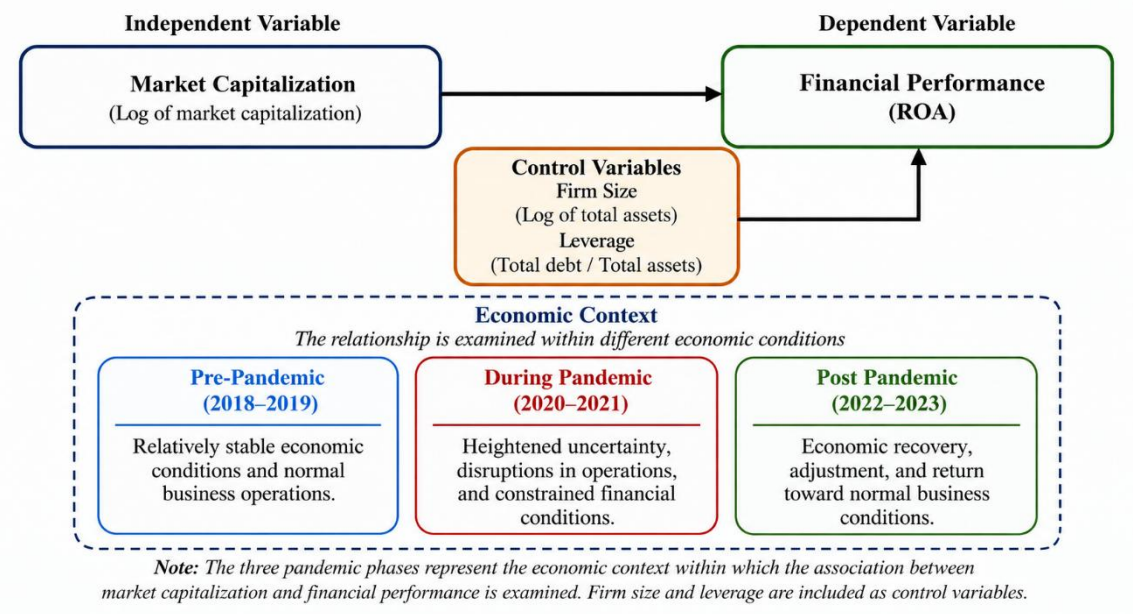


Figure 1. Conceptual Framework on Market Capitalization and Financial Performance Across Pandemic Phases

3. Research Method

3.1 Research Design

This study used quarterly panel data to examine the relationship between market capitalization and ROA of manufacturing firms listed on DSE. The advantage of using panel data is that it is possible to track the same firms over time and this makes it possible to control for unobservable time invariant heterogeneity (Baltagi, 2021; Wooldridge, 2020). The study period covered 2018-2023 and this was divided into pre-pandemic, pandemic and post-pandemic periods. Interaction terms were included to test if the association between market capitalization and ROA was different across the periods.

3.2 *Population and Data Source*

The study was carried out on the manufacturing firms that were registered in the DSE for the period 2018 to 2023. The quarterly accounting data was collected from the published financial reports of the firms, while the information needed to compute the market capitalization was collected from DSE records. Seven manufacturing firms had sufficient information for the analysis. Some firm-quarter observations were unavailable; therefore, the final dataset was unbalanced. Panel estimators can accommodate such missing time observations without requiring the exclusion of an entire firm (Baltagi, 2021).

3.3 Variable Measurement

ROA was obtained for each available quarter by dividing the reported quarterly net income by total assets for the same quarter. The resulting ratio was used as the accounting measure of financial performance.

For market capitalization, the share price recorded at the end of each quarter was multiplied by the corresponding number of ordinary shares outstanding. The resulting market value was converted to its natural logarithm before estimation. This variable represents market valuation rather than accounting-based firm size because its value depends partly on the price assigned to the firm's shares by the market.

$$MCit = Pit \times Sharesit$$

where, $MCit$ denotes the market capitalization of firm i in quarter t Pit is the quarter-end share price, and $Sharesit$ is the number of ordinary shares outstanding. Market capitalization was subsequently transformed using the natural logarithm.

$$LnMCit = ln(MCit)$$

The logarithmic transformation was used to reduce the influence of extreme differences in market valuation and improve the scale of the variable for regression analysis. Market capitalization is treated in this study as a market-based valuation measure rather than an accounting measure of firm size. This distinction is important because market capitalization incorporates both the number of shares outstanding and investors' valuation of those shares through the market price.

Table 1. Variable Measurement

Variable	Operational measurement	Frequency	Role
ROA	Net income ÷ total assets	Quarterly	Dependent
Market capitalization	Quarter-end share price × ordinary shares outstanding	Quarterly	Underlying market valuation
Ln market capitalization	ln (quarter-end share price × shares outstanding)	Quarterly	Main explanatory variable
Pandemic phase	Pre: 2018Q1–2019Q4; During: 2020Q1–2021Q4; Post: 2022Q1–2023Q4	Quarterly	Context
Firm size	Natural logarithm of total assets	Quarterly	Control
Leverage	Total debt ÷ total assets	Quarterly	Control

Source: Author's compilation based on the literature review

The economic-context variable identifies three phases: pre-pandemic (2018Q1–2019Q4), pandemic (2020Q1–2021Q4), and post-pandemic (2022Q1–2023Q4). The phase variable was interacted with logged

market capitalization to examine whether the association between market capitalization and ROA differed across the three economic periods.

3.4 Model Specification

To examine the relationship between market capitalization and financial performance across different pandemic phases, the study estimated the following interaction model:

$$ROAit = \beta 0 + \beta 1MCit + \beta 2Phaseit + \beta 3(MCit \times Phaseit) + \beta 4SIZEit + \beta 5LEVit + \mu i + \varepsilon it$$

where ROA_{it} represents return on assets of firm i in quarter t; MC_{it} represents the natural logarithm of market capitalization; $Phase_{it}$ represents the pandemic-phase indicators; MC_{it} x $Phase_{it}$ represents the interaction between market capitalization and the pandemic phases; $SIZE_{it}$ represents firm size measured as the natural logarithm of total assets; LEV_{it} represents leverage measured as total debt divided by total assets; μi captures unobserved firm-specific effects; and εit is the idiosyncratic error term. The pre-pandemic period serves as the reference category. The interaction specification allows the association between market capitalization and financial performance to vary across the three pandemic phases while controlling for firm size and leverage.

3.5 Data Analysis

Data analysis was performed using Stata 18. Descriptive statistics were used to describe the characteristics of study variables, and correlation analysis was used to examine pairwise relationships and potential multicollinearity.

Then, we estimated panel regression models to study the relationship between market capitalization and financial performance during the three pandemic phases. Fixed-effects and random-effects specifications were initially estimated, and model specification was assessed using the Hausman test. The Hausman test supported the fixed-effects specification.

Diagnostic tests were conducted for heteroskedasticity, cross-sectional dependence, serial correlation, and multicollinearity. Given the presence of heteroskedasticity and cross-sectional dependence, the main model was estimated using firm fixed effects with Driscoll–Kraay standard errors. Because the sample contains only seven firms, the results were interpreted cautiously. Wild-cluster bootstrap inference was also used to assess the phase interaction coefficients under the small number of firms.

Phase-specific effects were estimated to interpret the association between market capitalization and ROA separately for the pre-pandemic, pandemic, and post-pandemic periods. Finally, a lagged-market-capitalization specification was estimated as an additional robustness check to examine whether prior-quarter market capitalization was associated with subsequent financial performance. This analysis was used to assess the sensitivity of the contemporaneous results and does not establish causal effects.

4. Findings and Discussion

4.1 Descriptive Statistics

Table 2 provides descriptive statistics for the 126 firm-quarter observations in the final estimation sample. The mean ROA decreased sharply from 0.0823 in the pre-pandemic period to 0.0360 during the pandemic and then increased to 0.0777 in the post-pandemic period. The logged market capitalization also followed a similar pattern decreasing from 27.1674 before the pandemic to 25.3159 during the pandemic and then rising to 26.9795 after the pandemic. These descriptive patterns show that both the financial performance and market valuation deteriorated during the pandemic and then improved, but the descriptive statistics alone do not prove a relationship between the two variables.

The firm size was relatively stable across the three periods with mean values of 16.7900, 16.7981 and 16.9274, respectively. The mean leverage increased from 0.5518 in the pre-pandemic period to 0.6135 during the pandemic and then declined to 0.5810 in the post-pandemic period. Overall, the differences observed across the three phases provide a descriptive motivation for investigating whether the association between market capitalization and financial performance varies across economic conditions.

Table 2: Descriptive Statistics by Pandemic Phase

Phase	Variable	N	Mean	SD	Min	Max
Pre-pandemic	ROA	41	0.0823	0.0071	0.0709	0.0980
	Ln Market Capitalization	41	27.1674	2.1565	21.7100	30.8268
	Firm Size	41	16.7900	2.4595	12.2080	19.8960
	Leverage	41	0.5518	0.3251	0.0710	1.2500
Pandemic	ROA	37	0.0360	0.0121	0.0056	0.0529
	Ln Market Capitalization	37	25.3159	1.8763	21.0776	28.2892
	Firm Size	37	16.7981	2.4240	12.1350	19.8300
	Leverage	37	0.6135	0.3975	0.0767	1.7209
Post-pandemic	ROA	48	0.0777	0.0399	0.0506	0.2324
	Ln Market Capitalization	48	26.9795	2.3531	21.1560	33.8807
	Firm Size	48	16.9274	2.5816	12.4720	19.8290
	Leverage	48	0.5810	0.2441	0.2628	1.0943
Overall	ROA	126	0.0670	0.0326	0.0056	0.2324
	Ln Market Capitalization	126	26.5521	2.2871	21.0776	33.8807
	Firm Size	126	16.8447	2.4775	12.1350	19.8960
	Leverage	126	0.5811	0.3199	0.0710	1.7209

Note: Pre-pandemic = 2018–2019; pandemic = 2020–2021; post-pandemic = 2022–2023. Ln Market Capitalization represents the natural logarithm of quarter-end market capitalization.
Source: Author's computation from DSE manufacturing firms' data (2026)

4.2 Correlation Analysis

Table 3 presents the Pearson correlation coefficients among the variables included in the regression model. The analysis was conducted to examine the direction and strength of the pairwise relationships and to provide an initial assessment of potential multicollinearity.

Table 3. Correlation Matrix

Variables	ROA	Market Capitalization	Firm Size	Leverage
ROA	1.0000			
Market Capitalization	0.4943***	1.0000		
Firm Size	0.0014	−0.1442	1.0000	
Leverage	−0.2341***	−0.4775***	0.4078***	1.0000

*Note: N = 126. *** p < 0.01.*
Source: Author's computation from DSE Manufacturing Firms Data (2026).

Table 3 indicates that market capitalization is positively significantly correlated with ROA ($r = 0.4943$, $p < 0.001$). This implies that companies with higher market capitalization tend to have higher financial performance. Leverage has a negative correlation with ROA ($r = -0.2341$, $p = 0.0083$), on the other hand the correlation between firm size and ROA is weak and statistically insignificant ($r = 0.0014$, $p = 0.9876$). Among the explanatory variables, the largest correlation is between market capitalization and leverage ($r = -0.4775$), followed by firm size and leverage ($r = 0.4078$). Since none of the pairwise correlations is excessively high, the results do not indicate serious pairwise multicollinearity.

4.3 Differences in Financial Performance Across Pandemic Phases

Table 4 shows the robust comparison of financial performance across pandemic phases. Mean financial performance differed across the three pandemic phases. The firm-clustered regression showed a significant overall difference in ROA across the phases, $F(2, 6) = 313.49$, $p < 0.001$. Mean ROA was 0.0823 in the pre-pandemic period, declined to 0.0360 during the pandemic, and subsequently increased to 0.0777 in the post-pandemic period.

Table 4. Robust Comparison of Financial Performance Across Pandemic Phases

Comparison	Mean difference	Clustered SE	t	Bonferroni p-value	95% Bonferroni CI
Pandemic vs Pre-pandemic	−0.04629	0.00348	−13.29	<0.001	[−0.05774, −0.03484]
Post-pandemic vs Pre-pandemic	−0.00463	0.01172	−0.40	1.000	[−0.04315, 0.03389]
Post-pandemic vs Pandemic	0.04166	0.01476	2.82	0.091	[−0.00687, 0.09018]

Overall test: $F(2, 6) = 313.49$, $p < 0.001$.
Note: Standard errors are clustered at the firm level. Pairwise comparisons use Bonferroni adjustment for multiple comparisons.
Source: Author's computation from DSE Manufacturing Firms Data (2026).

Bonferroni-adjusted pairwise comparisons showed that ROA during the pandemic was significantly lower than in the pre-pandemic period (mean difference = −0.04629, $p < 0.001$). The difference between the post-pandemic and pre-pandemic periods was small and statistically insignificant (mean difference = −0.00463, $p = 1.000$). ROA increased by 0.04166 from the pandemic to the post-pandemic period. This increase did not remain significant after Bonferroni correction with firm-clustered standard errors ($p = 0.091$). The results therefore show a pandemic decline and a later recovery, but they do not by themselves establish that recovery reached pre-pandemic levels.

Prior to estimating the panel regression model, diagnostic tests were performed for analyzing the characteristics of the data and for choosing the appropriate estimation method. The tests included normality, multicollinearity, heteroskedasticity, cross-sectional dependence, serial correlation and model specification. The results are presented in Table 5.

Table 5. Summary of Diagnostic Test Results

Diagnostic Test	Test Statistic	p-value	Decision/Interpretation
Shapiro–Wilk Normality Test	$W = 0.836$	<0.001	ROA is not normally distributed
Joint Skewness/Kurtosis Test	$\chi^2 = 56.18$	<0.001	ROA is not normally distributed
Variance Inflation Factor (VIF)	Mean VIF = 1.34	–	No multicollinearity

Diagnostic Test	Test Statistic	p-value	Decision/Interpretation
Modified Wald Test	$\chi^2(7) = 29.38$	<0.001	Heteroskedasticity is present
Pesaran Cross-sectional Dependence Test	CD = 2.351	0.0187	Cross-sectional dependence is present
Wooldridge Test for Serial Correlation	F(1,6) = 3.807	0.0989	No significant first-order serial correlation
Hausman Specification Test	$\chi^2(3) = 14.44$	0.0024	Fixed-effects estimator preferred

Source: Author's computation from DSE Manufacturing Firms Data (2026)

The normality tests indicate that ROA is not normally distributed, with the Shapiro–Wilk test producing $W = 0.836$ ($p < 0.001$) and the joint skewness/kurtosis test also rejecting normality ($\chi^2 = 56.18$, $p < 0.001$). However, non-normality of the dependent variable does not by itself invalidate panel regression estimation. The results of the multicollinearity test show a mean VIF of 1.34 and individual VIF ranging from 1.20 to 1.53, indicating that multicollinearity is not an issue among the explanatory variables.

The Modified Wald test revealed the existence of groupwise heteroskedasticity ($\chi2 = 29.38$, $p < 0.001$). In addition, Pesaran's test rejected the null hypothesis of cross-sectional independence (CD = 2.351, p = 0.0187), suggesting that shocks impacting one listed manufacturing firm may be related to shocks impacting other firms. The Wooldridge test did not reject the null hypothesis of no first-order serial correlation at the 5% significance level (F = 3.807, p = 0.0989).

Finally, the Hausman specification test was statistically significant ($\chi^2 = 14.44$, p = 0.0024), indicating that the fixed-effects estimator was more appropriate than the random-effects estimator. Given the evidence of heteroskedasticity and cross-sectional dependence, the final fixed-effects model was estimated using Driscoll–Kraay standard errors to obtain inference that is robust to these disturbances. Firm size and leverage were retained as control variables in the model.

4.4 Panel Regression Results

Table 6 presents the fixed-effects regression results examining the relationship between market capitalization and financial performance across the three pandemic phases. Driscoll–Kraay standard errors were used following the diagnostic evidence of heteroskedasticity and cross-sectional dependence. Firm size and leverage were included as control variables.

Table 6. Fixed-Effects Regression Results for Market Capitalization and Financial Performance

Variable	Coefficient	DK Standard Error	t	p-value	95% CI
Market capitalization	0.005934	0.001444	4.11	<0.001	0.002939, 0.008929
Pandemic phase	−0.032476	0.037149	−0.87	0.391	−0.109519, 0.044566
Post-pandemic phase	−0.181138	0.040946	−4.42	<0.001	−0.266055, −0.096220
MC × Pandemic	−0.000173	0.001375	−0.13	0.901	−0.003024, 0.002679
MC × Post-pandemic	0.006565	0.001561	4.21	<0.001	0.003328, 0.009802
Firm size	0.004060	0.005391	0.75	0.459	−0.007120, 0.015239
Leverage	−0.019636	0.011059	−1.78	0.090	−0.042570, 0.003300

Variable	Coefficient	DK Standard Error	t	p-value	95% CI
Constant	−0.135214	0.119132	−1.13	0.269	−0.382279, 0.111850

Model statistics: N = 126; Firms = 7; Within R^2 = 0.6804; F(7,22) = 140.18; p < 0.001.
Note: Pre-pandemic (2018–2019) is the reference phase. Driscoll–Kraay standard errors are reported.
Source: Author's computation from DSE Manufacturing Firms Data (2026)

Table 6 shows that market capitalization has a positive and statistically significant association with ROA during the pre-pandemic period (β = 0.005934, p < 0.001). The interaction between market capitalization and the pandemic period was negative but statistically insignificant (β = −0.000173, p = 0.901). It implies that the relationship between market capitalization and financial performance does not significantly vary between the pre-pandemic and pandemic periods.

Conversely, the interaction of market capitalization and post-pandemic period is positive and statistically significant (β = 0.006565, p < 0.001), indicating that the relationship is significantly stronger in the post pandemic period than in the pre-pandemic period. Firm size has a positive but insignificant coefficient (β = 0.004060, p = 0.459), and leverage has a negative insignificant coefficient at the 5% level (β = −0.019636, p = 0.090).

4.5 Phase-specific effects

To facilitate the interpretation of the interaction model, phase-specific effects of market capitalization on ROA were estimated for the pre-pandemic, pandemic, and post-pandemic periods. The results are presented in Table 7.

Table 7. Phase-Specific Effects of Market Capitalization on ROA

Phase	Effect	DK SE	t	p-value	95% CI
Pre-pandemic	0.005934	0.001444	4.11	<0.001	[0.002939, 0.008929]
Pandemic	0.005761	0.002165	2.66	0.014	[0.001272, 0.010250]
Post-pandemic	0.012499	0.001544	8.10	<0.001	[0.009297, 0.015700]

Source: Author's computation from DSE Manufacturing Firms Data (2026)

The phase-specific estimates show that the association of market capitalization with ROA was positive and significant in all three periods. The positive relationship was 0.005934 before the pandemic (p < 0.001), 0.005761 during the pandemic (p = 0.014) and 0.012499 after the pandemic (p < 0.001). Although the association persisted during the pandemic, the difference in effect compared to the pre-pandemic period was not statistically significant. The post-pandemic effect however was significantly more positive than the pre-pandemic effect, as indicated by the significant post-pandemic interaction term.

Figure 2 shows that the estimated association between market capitalization and ROA remained positive across the three pandemic phases. The marginal effect was similar in the pre-pandemic and pandemic periods but increased in the post-pandemic period. However, the wild-cluster bootstrap results indicate that the differences across phases are sensitive to the method of statistical inference. Therefore, the figure should be interpreted as showing the estimated pattern rather than conclusive evidence of phase-dependent differences.

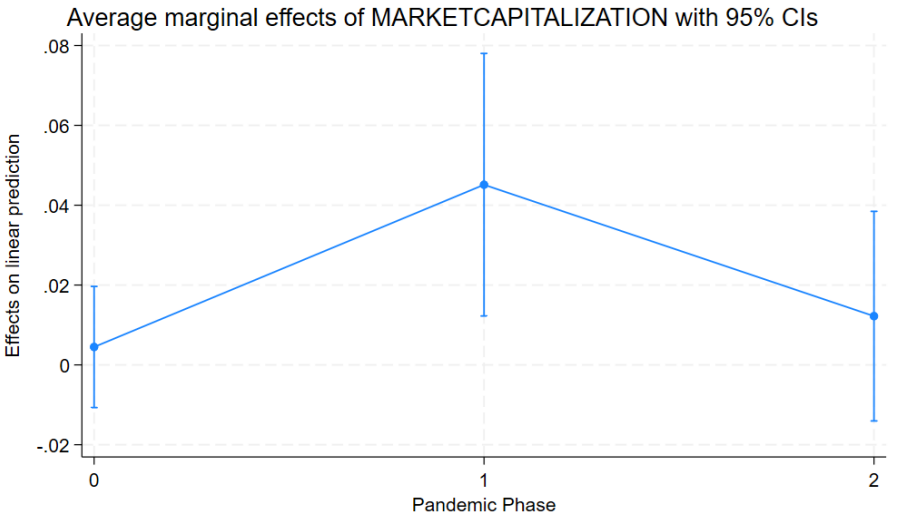


Figure 2. Average Marginal Effects of Market Capitalization Across Pandemic Phases

4.6 Robustness and Sensitivity Analysis

Further analyses were conducted to assess the sensitivity of the main findings. First, Driscoll–Kraay standard errors were estimated to account for heteroskedasticity and cross-sectional dependence. The results continued to show a positive association between market capitalization and ROA. The post-pandemic interaction was positive and statistically significant under this specification, whereas the pandemic interaction remained insignificant.

Given the small number of firms, wild-cluster bootstrap inference was also applied to the phase interaction coefficients. The pandemic interaction remained insignificant ($p = 0.9219$), while the post-pandemic interaction was also insignificant ($p = 0.2969$). The joint test of the two interaction terms was not statistically significant ($p = 0.1875$). Thus, evidence that the market capitalization–ROA relationship differed across phases was sensitive to the method used for statistical inference.

Finally, market capitalization was lagged by one quarter to examine whether the contemporaneous results persisted when prior-quarter market capitalization was related to subsequent ROA. The phase-specific marginal effects remained positive in the pre-pandemic ($\beta = 0.003436$, $p = 0.262$), pandemic ($\beta = 0.003224$, $p = 0.470$), and post-pandemic periods ($\beta = 0.007890$, $p = 0.172$), but none was statistically significant. The lagged phase interactions were also jointly insignificant ($F = 3.45$, $p = 0.1006$). These findings suggest that the positive contemporaneous association is not equally strong in the lagged specification and should therefore be interpreted as an association rather than evidence of a causal effect. The robustness and sensitivity analysis results are shown in Table 8.

Table 8. Robustness and Sensitivity Analysis

Robustness test	Phase / effect	Coefficient	p-value	Result
Driscoll–Kraay FE	Market capitalization (Pre-pandemic)	0.005934	<0.001	Significant
	Pandemic interaction	−0.000173	0.901	Insignificant
	Post-pandemic interaction	0.006565	<0.001	Significant

Robustness test	Phase / effect	Coefficient	p-value	Result
Wild-cluster bootstrap	Pandemic interaction	−0.000173	0.9219	Insignificant
	Post-pandemic interaction	0.006565	0.2969	Insignificant
	Joint interaction test	—	0.1875	Insignificant
Lagged market capitalization	Pre-pandemic marginal effect	0.003436	0.262	Insignificant
	Pandemic marginal effect	0.003224	0.470	Insignificant
	Post-pandemic marginal effect	0.007890	0.172	Insignificant
	Joint interaction test	—	0.1006	Insignificant

Source: Author's computation from DSE Manufacturing Firms Data (2026)

The robustness and sensitivity analyses show that the findings depend partly on the estimation method. Under the Driscoll–Kraay specification, market capitalization remained positively and significantly associated with ROA in the pre-pandemic period, while the post-pandemic interaction was also positive and significant. However, the wild-cluster bootstrap results showed that neither the pandemic nor post-pandemic interaction was statistically significant. Similarly, when market capitalization was lagged by one quarter, its phase-specific effects remained positive but were statistically insignificant across all three periods. Overall, the results provide consistent evidence of a positive direction of association between market capitalization and financial performance, but the evidence of significant differences across pandemic phases is sensitive to the inference method and model specification.

4.7 Discussion of Findings

The results showed a positive relationship between market capitalization and financial performance in all phases of the pandemic. The positive relationship between market capitalization and ROA was established in the pre-pandemic, pandemic and post-pandemic periods, with the strongest association in the post-pandemic period. Thus, firms with higher market capitalization had higher financial performance, and the strength of this relationship varied across the model specifications (Jagannathan & Khan, 2019; Jeanluc & Muiruri, 2022).

From the perspective of Signaling Theory, market capitalization may provide information about how the market values a firm and its prospects. A higher market capitalization may reflect stronger investor confidence and favorable expectations about the firm. Such market information may help reduce information asymmetry between firms and investors (Spence, 1973; Miller & Rock, 1985). However, the findings should be interpreted as associations rather than evidence that higher market capitalization directly causes improvements in financial performance.

The positive association obtained during the pandemic is consistent with studies that suggest better position of firms with stronger market positions to withstand economic disturbances due to investor confidence, financing capacity and operational flexibility (Brueckner et al., 2023; Halling et al. 2020; Joshi & Joshi, 2023; Nurhayati et al. 2021). The results are also related to Djashan (2019) who finds a relationship between firm size, capital structure and firm value. Similarly, the positive direction of the relationship is generally consistent with studies that report a positive association between market capitalization and firm performance (Almumani & Almazari, 2024; Franco et al. 2023; Jeanluc & Muiruri, 2022; Koila et al. 2018).

An important finding is the relatively larger estimated association in the post-pandemic period. The post-pandemic interaction was positive and statistically significant for the Driscoll–Kraay specification implying that the relationship was stronger than the pre-pandemic period which may indicate a stronger association between market valuation and firm performance during the recovery period. As economic activity recovered, firms with stronger market valuations may also have been those better positioned to restore operations and benefit from improving business conditions.

Nevertheless, this phase difference should be interpreted cautiously. Wild-cluster bootstrap inference did not find the pandemic or post-pandemic interaction coefficients statistically significant, and the interactions were not jointly significant. Furthermore, when market capitalization was lagged by one quarter, the estimated effects remained positive across all three phases but were statistically insignificant. Therefore, the results provide stronger evidence of a positive association between market capitalization and ROA than of statistically robust differences in that association across pandemic phases.

For the Tanzanian capital market, the findings suggest that market capitalization can provide useful information about the financial position and performance of listed manufacturing firms (Jeanluc & Muiruri, 2022; Koila et al., 2018). However, investors and managers should not interpret market capitalization in isolation. Its relationship with financial performance appears to depend partly on prevailing economic conditions and model specification. Thus, the findings support a phase-sensitive interpretation of market capitalization while recognizing the uncertainty surrounding the magnitude of differences across the three periods.

5. Conclusion, Implications and Limitations

The study examined the association between market capitalization and financial performance of manufacturing firms listed at the Dar es Salaam Stock Exchange in the pre-pandemic, pandemic and post-pandemic periods. The findings indicate that market capitalization was positively associated with financial performance during the three periods. The phase-specific estimates were positive in the pre-pandemic, pandemic, and post-pandemic periods, with the largest estimated association observed in the post-pandemic period.

However, the evidence of differences across the pandemic phases was sensitive to the method of estimation. Although the Driscoll–Kraay results indicated a significantly stronger post-pandemic relationship relative to the pre-pandemic period, the wild-cluster bootstrap did not confirm significant differences between the phases. Similarly, the lagged market capitalization model produced positive but statistically insignificant effects across all three periods. Therefore, the study provides stronger evidence of a positive association between market capitalization and financial performance than of clear differences in this relationship across pandemic phases. The findings should also be interpreted as associations rather than causal effects.

The findings provide context-specific evidence consistent with Signaling Theory by suggesting that market capitalization may carry information about the market's assessment of a firm's position and prospects under different economic conditions. Thus, the informational role of market capitalization should be considered in conjunction with the prevailing economic environment rather than assumed to be stable across periods.

From the managerial point of view, firms should concentrate on factors that increase market valuation, for example transparent financial reporting, strong investor relations, and sound financial management. These actions may help increase investor confidence and improve the firm's position in the capital market. For investors, market capitalization could be a useful tool in evaluating publicly traded manufacturing firms but should be used along with other firm-specific and macroeconomic data. The findings suggest that

policymakers and capital market regulators should formulate policies that promote market transparency, liquidity and investor participation.

This research has several limitations. First, the scope was restricted to seven manufacturing firms listed on the DSE, hence the results may not be generalized to other sectors and markets. The small number of firms also limits the statistical inference especially for phase comparison. Second, financial performance was measured with the ROA and other measures might give different results. Third, the study treats the COVID-19 pandemic as a specific period of systemic uncertainty, the results may not be generalized to other periods of economic disruption. Finally, the lagged analysis does not fully solve the problem of endogeneity or establish causality between market capitalization and financial performance. The relatively short study period and the possibility of omitted variables may also affect the estimates. Moreover, because the DSE is a relatively thinly traded market, quarter-end share prices may occasionally reflect limited trading activity, which may introduce measurement limitations into market capitalization.

Future research may expand the sample to include firms from other sectors and other frontier and emerging capital markets. Future studies may also use alternative measures of performance such as Tobin's Q and stock returns and study other periods of economic disruption. Future research may further apply methods that deal with possible endogeneity and explore whether corporate governance, ownership structure, institutional quality and other firm characteristics influence the relationship between market capitalization and financial performance.

Data Availability

The data supporting the findings of this study were obtained from publicly available quarterly and annual financial reports of manufacturing firms listed on the Dar es Salaam Stock Exchange (DSE), together with market information obtained from the DSE. The compiled dataset is available from the corresponding author upon reasonable request.

Funding Information

This research received no external funding.

Ethics Approval

Not applicable.

Conflict of Interest

The authors declare that there are no conflicts of interest regarding the publication of this research paper.

Author Contributions

Abraham Charles Nathanael: Conceptualization, Methodology, Formal Analysis, Data Curation, Investigation, Validation, Software, Writing -Original Draft Preparation, Writing - Review & Editing.

Alex Reuben Kira: Conceptualization, Supervision, Validation, Editing.

Anastasia R. Njiku: Conceptualization, Supervision, Validation, Review & Editing.

Disclosure of AI Use

No AI tools were used in the preparation of this manuscript.

Acknowledgements

The authors gratefully acknowledge the University of Dodoma (UDOM), Tanzania, for providing the academic environment, institutional support and research facilities that facilitated the completion of this study.

References

Almumani, M. A. Y., & Almazari, A. A. K. (2024). The effect of profitability & market value on market capitalization of the listed insurance companies of Jordan (2010–2023). *European Journal of Accounting, Auditing and Finance Research, 12*(11), 44–57. https://doi.org/10.37745/ejaafr.2013/vol12n114457

Ateka, A., & Kariuki, P. (2018). Effect of capital market deepening on financial performance of listed commercial banks in Kenya. *Strategic Journal of Business and Change Management, 5*(4), 725–740. https://www.strategicjournals.com/index.php/journal/article/view/921/916

Baltagi, B. H. (2021). *Econometric analysis of panel data* (6th ed.). John Wiley & Sons.

Brueckner, M., Kang, W., & Vespignani, J. (2023). COVID-19 and firms' stock price growth: The role of market capitalization. *Applied Economics, 55*(39), 4522–4538. https://doi.org/10.1080/00036846.2022.2129575

Danaila, A. B., & Cosmulese, C. G. (2023). Effect of market capitalization on the association between firm size and corporate performance of listed companies at Bucharest Stock Exchange in Romania. *Review of International Comparative Management, 24*(5), 815–825. https://doi.org/10.24818/RMCI.2023.8.815

Ding, W., Levine, R., Lin, C., & Xie, W. (2021). Corporate immunity to the COVID-19 pandemic. *Journal of Financial Economics, 141*(2), 802–830. https://doi.org/10.1016/j.jfineco.2021.03.005

Djashan, I. A. (2019). The effect of firm size and profitability on firm value with capital structure as intervening variables in Indonesia. *Journal of International Business, Economics and Entrepreneurship, 4*(2), 55–59. https://doi.org/10.24191/jibe.v4i2.14315

Franco, G., Hitschfeld, M., Pina, Á., & Puy, D. (2023). *The law of the strongest? Exploring the drivers of firm performance during the COVID-19 crisis* (OECD Economics Department Working Papers No. 1779). OECD Publishing. https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/12/the-law-of-the-strongest-exploring-the-drivers-of-firm-performance-during-the-covid-19-crisis_8b300218/98397076-en.pdf

Halling, M., Yu, J., & Zechner, J. (2020). How did COVID-19 affect firms' access to public capital markets? *The Review of Corporate Finance Studies, 9*(3), 501–533. https://doi.org/10.1093/rcfs/cfaa008

Jagannathan, U. K., & Khan, N. (2019). A study on factors related to market capitalization in Indian manufacturing firms. *Indian Journal of Finance, 13*(12), 50–61. https://doi.org/10.17010/ijf/2019/v13i12/149268

Jang, B.-G., Lee, B.-S., & Lee, H.-T. (2018). Market capitalization, corporate payouts, and expected returns. *Social Science Research Network*. https://doi.org/10.2139/ssrn.3141038

Jeanluc, M., & Muiruri, P. M. (2022). Stock exchange market capitalization and financial performance of firms in Rwanda Stock Exchange: A survey of listed firms in Rwanda. *Journal of Finance and Accounting, 6*(2), 22–40. https://doi.org/10.53819/81018102t5057

Joshi, H., & Joshi, B. (2023). Moderating role of financial characteristics in sectoral performance during the period of economic disruption: Evidence from the COVID-19 pandemic. *Indonesian Capital Market Review, 15*(2), 71–85. https://doi.org/10.21002/icmr.v15i2.1163

Koila, E., Kiru, K., & Koima, J. (2018). Relationship between share market capitalization and performance of listed firms at Nairobi Securities Exchange Limited, Kenya. *Scholars Journal of Economics, Business and Management, 5*(11), 992–996. https://saspublishers.com/article/14609/10.36347/sjebm.2018.v05i11.001

Miller, M. H., & Rock, K. (1985). Dividend policy under asymmetric information. *The Journal of Finance, 40*(4), 1031–1051. https://doi.org/10.2307/2328393

Muna, A., Chalu, H., & Keregero, C. M. (2026). Value relevance and stock market performance: Evidence from the Dar es Salaam Stock Exchange in Tanzania. International Journal of Applied Research in Business and Management, 7(7). https://doi.org/10.51137/wrp.ijarbm.730

Nurhayati, I., Endri, E., Aminda, R. S., & Muniroh, L. (2021). Impact of COVID-19 on performance evaluation large market capitalization stocks and open innovation. *Journal of Open Innovation: Technology, Market, and Complexity, 7*(1), Article 56. https://doi.org/10.3390/joitmc7010056

Pavone, P. (2019). Market capitalization and financial variables: Evidence from Italian listed companies. *International Journal of Academic Research in Business and Social Sciences, 9*(3), 1356–1371. https://doi.org/10.6007/IJARBSS/v9-i3/5802

Roosmawarni, A., Fatihudin, N., & Mauliddah, D. (2022). Market capitalisation and financial performance: Evidence from banking listed company in Indonesia. *Jurnal Analisis Bisnis & Ekonomi, 20*(2), 124–136. https://doi.org/10.31603/bisnisekonomi.v20i2.7835

Sharma, A., Lee, S., & Lin, M. S. (2023). Relationship of precrisis financial decisions with the financial distress and performance of small- and medium-sized restaurants during COVID-19. *Cornell Hospitality Quarterly, 64*(4), 460–472. https://doi.org/10.1177/19389655231178264

Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics, 87*(3), 355–374. https://doi.org/10.2307/1882010

Sylidion, E., Setonga, J. A., & Shabani, O. P. (2025). Unlocking the potential of individual investors participation: A glimpse into Tanzania's Dar es Salaam Stock Exchange (DSE). *Ranah Research Journal of Multidisciplinary Research and Development, 7*(5), 3250–3265. https://doi.org/10.38035/rrj.v7i5.1640

Wooldridge, J. M. (2020). *Introductory econometrics: A modern approach* (7th ed.). Cengage Learning.

Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)

Published by UiTM Press, Universiti Teknologi MARA
© 2026 The Authors. This article is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) License.
https://creativecommons.org/licenses/by-nc-sa/4.0/