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Relationship between profitability and dividend pay-out from industrial companies listed at Dar es Salaam Stock Exchange, Tanzania

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ABSTRACT

The creation of profits is necessary in order to distribute dividends to shareholders after investment. Previous studies focused on dividend payments and macroeconomic conditions. The aim of this paper is to investigate the connection between profitability and dividend pay-out in Tanzanian industrial companies that are listed on the Dar es Salaam Stock Exchange (DSE). The study used a panel data research design and a quantitative technique. The research conducted from 2009 to 2023, 105 firm-year data points from seven industry categories were analyzed. The study was to compile significance data through documentary review. Panel data regression was used to evaluate the research data both descriptively and inferentially. The findings of the research showed a strong positive association ($P < 0.005$) between manufacturing firms' profitability and dividend payout. All things considered; the findings indicate that industrial enterprises listed on the DSE are primarily motivated by profit. The study suggests that manufacturing companies should raise their profitability to attract more capital and raise the dividend payment ratio. Also, the study recommends that the policy makers should formulate the good policy that can be friendly for investors.

Keyword: Profitability, Dividend Payout, Industrial Firms, DSE, Tanzania

1. 1 INTRODUCTION

Profit development is essential for the distribution of dividends to shareholders after investment Goenawan (2023). The previous study looks at the dividend payout and macroeconomic factors. In Europe and Asia, dividends have been the subject of numerous studies. For instance, Lotto (2020) found that while firm size and profitability are positively connected with dividend payout ratio, there is an adverse correlation between GDP, leverage, and firm growth. Hia (2023) also found that companies that pay out higher dividends have lower gearing. Additionally, since lenders see corporations with higher dividend payments as financially stable, these companies typically have lower loan prices. Additionally, a 2023 study by Akib et al. found a weak but statistically significant positive correlation between the dividend of the firms and the dividend payment share. It was also demonstrated that the dividend payout ratio, total assets, firm growth, and leverage are the only variables that have a meaningful impact on the achievement of firms listed on the DSE.

It was discovered that there was association between the explanatory and response variables. Regression analysis was done using multiple regressions, and the study's conclusions were derived from a Tanzanian study conducted in 2023 by Anuar et al. on the factors influencing a company's dividend. The study comes to the conclusion that shareholders' funds, liquidity, and earnings after taxes have an impact on the amount of dividends that firms listed at the DSE pay out. However, Handayani and Ibrani's (2023) research in Tanzania on the variables affecting the dividend distribution of commercial banks during a ten-year span between 2010 and 2019 found that profitability among Tanzanian commercial banks positively impacted

dividend payout. Consequently, the management was recommended to put emphasis on the profitability of the banks while determining whether to pay dividends. However, a study by Putri (2023) on the impact of company size and profitability on dividend payout of financial institutions listed in Dar es Salaam stock exchange found a positive and significant correlation between the profitability of the financial institution and the dividend payout of financial companies using all financial firms listed at the DSE between 2015 and 2019. The results suggest that investors should consider investing in financially successful institutions that have a history of delivering dividends.

In light of the aforementioned, our study made two significant additions to the body of existing literature. It starts by talking about industrial firms' dividend payments. Tanzania is included in this study because of its industrialization plan, which has made it the fastest growing major economy in Africa. Its diversified industry, investment prospects, and growing integration into the global economy are drawing strategic investments from numerous major economies. Second, by examining the variables that affect dividend distribution in the manufacturing industry, this study seeks to close a sizable gap in the current literature. Determining how much of an organization's earnings should be kept or reinvested to support its plans for future investments and how much should be distributed as dividends to preference and common shareholders in return for their investment in the company is known as dividend payout (Elessa et al.,2023). This study agreed with Nasrulloh's (2024) definition of dividend payout, which defines it as the amount a company uses to decide how much dividend to pay out to its shareholders.

Decisions about dividend distribution are influenced by a company's profitability, notwithstanding prior findings to the contrary (Devi et al., 2023). The packing order idea states that businesses would prefer to use saved money to fund NPV initiatives, which leads to reduced wages and higher profit margins. According to Nuhu (2023), companies that maintain consistent profitabilidad usually distribute larger dividendos. Successful companies pay out higher dividends than less successful or loss-making ones when it comes to dividend management. Their steady profits are translated into free cash flows and higher dividends. Yoewono (2023) looked into income in great detail as a potential reason for dividend payments. This study uses the net profit ratio and return on equity (ROE) to analyze profitability. The study is significant in a variety of settings. It first discusses the proper way for company management to decide which factors to take into account before making a decision regarding dividend payments. A sizeable dividend payment is necessary because it lays the groundwork for success and allows shareholders to receive more dividends, provided that the company's general health remains strong. Second, the research enhances meaningfully the body of empirical and theoretical knowledge concerning the variables influencing dividend distribution. The most of previous studies did not explained the industrial companies so this study contribute on dividend payout from industrial companies listed at Dar es Salaam Stock Exchange, Tanzania. Finally, the study provides a framework and a resource for further research into the variables influencing dividend payment behavior in developing nations. This study closes a knowledge gap by investigating the relationship between profitability and dividend distribution in industrial firms listed on Tanzania's DSE.

2. LITERATURE REVIEW

The "bird in the hand" metaphor was employed in this research to explain how bonus allocation works. In response to Modigliani and Miller's dividend irrelevance argument, Gordon proposed the theory in 1963 (Bhattacharya 1979). When information is asymmetric and variable, dividends are often considered to be worth less than capital gains. Investors favor dividends over retained earnings because they are less certain about future cash flows. As a larger payout ratio lowers the needed rate of return, or cost of capital, a firm gains value (Prihanta et al., 2023). In Asia, one of the crucial components of dividend distribution in businesses that has been examined in previous research is this (Yoppy, 2023). The research used the bird in the hand theory to look at how dividend distributions in manufacturing companies were affected by it. According to the idea, investors prioritize present benefits over future ones, which could impact the profitability of industrial firms. Findings show that the concept helped clarificar how profitability and dividend distribution relate to one another (Salsabila, 2024). In America, profitability was shown to be a reliable indicator of dividend distribution in earlier research. Numerous conclusions regarding the connection between profitability and dividend payout have been made. Yoewono (2023) asserts that there is a strong relationship between dividend payments and profitability. This is compatible with the idea of a pecking order, since it implies that firms choose to invest in assets rather than provide dividends to shareholders. Handayani and Ibrani (2023) found that retained earnings for reinvestment were higher and dividend payout was lower when there was a higher return on equity. However, there are a lot of them. Akib et al. (2023) conducted an investigation on companies that are listed on Saudi stock exchanges. The results demonstrated a substantial and favorable relationship between dividends per share and earnings per share. As a result, when a company's profits rise, so do its dividends per share.

Handayani and Ibrani (2023) carried a research in Kenya in 2021 on the effect of profitability on dividend distribution in deposit-taking savings and credit cooperatives. The analysis revealed a significant correlation. This showed that profitability has a favorable and considerable impact on dividend payments at Kenyan deposit-taking Saccos.

In Africa, Yoewono (2023) looked into the variables affecting publicly traded food industry companies that operate in emerging regions while deciding whether to pay dividends. Using unbalanced panel data spanning 14 years and 799 observations of companies from 15 countries, Yoewono discovered that the biggest factor affecting dividend distribution was profitability. Handayani and Ibrani (2023) used 106 Borsa Istanbul businesses that were listed between 2009 and 2015 and found a statistically significant favorable influence on dividend payouts in Turkey. The relationship between return on equity and other dividends was strong and positive. Handayani and Ibrani (2023) examined the factors influencing dividend distribution for pharmaceutical companies registered on the Pakistan capital market using longitudinal data for five years, from 2009 to 2014. They came to the conclusion that dividend payout is significantly influenced by profitability. Kenya, Yoewono (2023) used information from the Nigerian stock exchange and a panel of participants conducted between 2006 and 2015 to examine the factors influencing dividend distribution for nine consumer goods companies in Nigeria. According to the research, profitability and dividend distribution have a small but positive association. Moreover, Handayani and Ibrani (2023) assess the determinants influencing dividend distribution in Malaysia's industrial sector using the 2012-2016 annual reports of 30 Bursa Malaysia-listed real estate companies. The research findings indicate a robust and positive correlation between dividend distribution and return on equity. Tanzania, another study on the variables affecting dividend payment ratios in Nigerian non-financial enterprises was carried out by Paseda (2020). The study's conclusions showed that dividend payments to non-financial enterprises in Nigeria are influenced by profitability from economic determinants. These determinants affecting dividend payout ratios in Indonesian real estate companies were examined by Putri (2023). Ten Indonesian companies and four years' worth of panel data, spanning from 2009 to 2012, were used in the study. The findings indicated that ROA had the largest statistical significance affecting dividend payment shares. In this case, the response variable is the dividend distribution. Conversely, the size of the company is the control variable. The following are the relationships between the explanatory and response variables. Some argue that the size-based profitability of manufacturing companies listed on the DSE has little or no effect on the dividend distribution. Dividend payments climb significantly for manufacturing businesses that are profitable, and vice versa (Yoewono, 2023).

3. RESEARCH METHODOLOGY

Both quantitative and longitudinal research methods were used in the study. 105 firm-year data from seven different industrial groupings between 2009 and 2023 were made available for this investigation. The study team went through a significant number of papers in order to gather important information. Panel data regression was used to evaluate the investigation's data both descriptively and inferentially.

3.1 Model Specification

The fixed effect models model for the factors that change over time and the components that remain constant over time, respectively, were assessed using the Xtoverid test to see which model best fits our capital structure analysis data. The reason of opting the fixed effect model beacause it easy to test the long term relationship between variables. According to the fixed effect model, the dependent, control, and explanatory variables in this research are as follows:

$$DPO = \alpha_i + \beta 1 PROF_{it} + \beta 2 FS_{it} + \mu_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where:

Y_{it} – is dividend payout, where **i** = unit, and **t** = period

β 1- β 2– are Coefficients of explanatory variables $PROF_{it}$ – Profitability; FS=Firm

α – is the unidentified intercept for each unit

μ_{it} – Stochastic term

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

The data from the descriptive statistics are shown in Table 4.1. The table displays the explanatory and response variables that were employed in the study. The descriptive findings contain the lowest and highest values of every variable, as well as its standard deviation and average.

Table 4.1 Descriptive statistics for manufacturing firms listed in DSE

Variable		Mean	Std. Dev.	Min	Max	Observations	
Firm	overall	4.5	2.301	1	8	N =	105
	between		2.449	1	8	n =	7
	within		0	4.5	4.5	T =	15
Year	overall	2008	4.339	2001	2015	N =	105
	between		0	2008	2008	n =	7
	within		4.339	2001	2015	T =	15
Firm size	overall	0.305	0.217	0.1	0.700	N =	105
	between		0.231	0.1	0.700	n =	7
	within		6.03E-17	0.305	0.305	T =	15
Profitability	overall	3.829	2.388	2	8.530	N =	105
	between		2.518	2	8.528	n =	7
	within		0.327	2.529	4.529	T =	15

Source: Stata Output (2024)

4.2 Pairwise correlation

Pairwise correlation analysis was used to look at the relationship between these parameters. The correlation from a single observation was obtained using the pairwise correlation.

Table 4.2: Pairwise correlations

Variables	(Firm size)	(Profitability)
Firm size	1.000	
Profitability	-0.149*	1.000

Source: Stata Output (2024)

Multicollinearity can be detected when there is at least a 0.8 correlation coefficient between the explanatory variables. The application of association investigation to determine the direction and degree of the relationship between explanatory and response variables is demonstrated in Table 4.2 (Putri, 2023). There is a positive association between business size, profitability, and dividend distribution, as indicated by a pairwise correlation in Table 4.2. Given that multicollinearity may occur, the formal multicollinearity test, also known as the variance inflation factor, should be applied.

4.3 Multicollinearity

The high level of linear correlation between the independent variables in a multiple regression model is known as multicollinearity, and it causes erroneous regression findings (Kim, 2019). The variance inflation factor (VIF), a measure for multicollinearity detection, is displayed in Table 4.3.

Table 4.3: Multicollinearity Test

Variable	**VIF**	**1/VIF**
Firm size	2.2	0.278
Profitability	3.1	0.903
Mean VIF	5.3	

Source: Stata Output (2024)

Table 4.3 shows the findings of the multicollinearity test using the VIF. Our investigation of multicollinearity, which examined the effects of independent variables on one another, suggests that the data is not multicollinear, with a mean VIF of 2.48 (less than 5). When a variable's VIF exceeds 10, it's commonly assumed that there is a multicollinearity issue. As a result, Table 4.3 indicated that multicollinearity is not an issue.

4.4 Test for Autocorrelation

Autocorrelation, often known as, Serial correlation is a common result of time series analysis. serial correlation tests are used in pooled panels to study big panels over long time periods (greater than 20-40 years)." Small panels do not have this matter (even after a few years). Serial correlation raises coefficient standard errors while increasing R-squared.

Table 4.4: Serial autocorrelation test

Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
F (2, 3) = 2.2555
P > F = 1.000

Source: Stata Output (2024)

Table 4.4 indicated the findings of the Wooldridge autocorrelation test, which is employed to determine whether the error terms show autocorrelation or a systematic pattern. The test is also directed by the following hypothesis. The H0 asserts that autocorrelation is absent, while the alternative hypothesis maintains that it does. Table 4.4 accepts the null hypothesis, indicating that the model's autocorrelation problem is not present (P-value > 0.05).

4.5 Normality Test

The normality test was used to see if the data used in this investigation had a normal distribution. Normality rules had no bearing on pooled panel regression, because pooled panel data were used in this study. To assess normality, the kurtosis/skewness test was employed. A likelihood greater than 0.05 suggests that the data have a regular distribution. The results can be found in Table 4.4.

Table 4.5: Skewness/Kurtosis Tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
Dividend	120	0.0006	0.9994	2.36	0.569
Firm size	120	0.0001	0.9999	3.69	0.754
Profitability	120	0.0011	0.9989	1.38	0.427

Source: Stata Output (2024)

The normality test was performed to determine whether the data utilized in this investigation had a normal distribution. Since this study uses pooled panel data, normality assumptions have no bearing on pooled panel regression. The skewness/kurtosis test was used to assess normality. A probability greater than 0.05 suggests that the data have a regular distribución. Table 4.4 presents the findings.

4.6 Unit root / Stationarity

Determining whether the data in a time series are stationary or non-stationary is crucial when working with them. When using time series models for statistical inference, certain stochastic processes (such as random walks) have a property called the unit root that can lead to problems.

Table 4.6: Panel Unit Root Tests for the Variables at Level

Variable	Statistic	Prob
Firm size		
Unadjusted t	-3.2120	
Adjusted t*	-2.022	0.03
Profitability		
Unadjusted t	-6.509	
Adjusted t*	-5.029	0.01

It tests the following hypothesis

Ho: Panels contain unit roots

Ha: Panels are stationary

Source: Stata Output (2024)

Table 4.6 displays the results of the stationarity test. We examined the null hypothesis that panels had unit roots and found that all five variables had p-values less than 0.05, meaning that they were significant at the 0.05 level. Consequently, the null hypothesis was refuted, demonstrating the stationary character of the variables under investigation.

4.7 Selection between Fixed Effect and Random Effect Model

The existence of the free variables has no effect on the specific implications of the random effect hypothesis. The fixed effect theory is related to the free variables and is based on people's explicit affects (Yoewono, 2023). Select the arbitrary impacts model that aligns with the hypothesis that impact sizes were appropriated in order to test the effect sizes of the inquiry. If there are notable variations between the exams, the fixed-effect model in this study cannot be applied (Yoewono, 2023).

Table 4.7 Breusch and Pagan Lagrangian multiplier test for random effects

Estimated results:		
	Var	sd
Dividend	3.023	1.518
E	1.022	0.518
U	2.363	1.219
Var(u)=0		
Test:	chibar2(01) =	598.00
	Prob>chibar2=	0.002

Source: Stat Output (2024)

Table 4.7 shows the outcomes of the Breusch and Pagan Lagrangian multiplier test for random effects. The LM test assumes that there is no variance across entities. This implies that there is no statistical difference between the units and no panel influence. The alternative hypothesis was accepted because the P-value (0.000)

was less than 0.05 and the H0 was accepted in light of the data in Table 4.7. When analyzing the effects of profitability on dividend payout in manufacturing-financial listed businesses, panel models (fixed effect or random effect) outperform ordinal (pooled) regression analysis.

Table 4.8: Hausman specification test

Variable	**Coefficient**		**Difference**	**standard error**
	B	B	b-B	sqrt(diag(V_b-V_B))
	Fixed	random		S.E.
Firm size	-3.846	-5.6325	0.01	0.3351
Profitability	0.007	0.013	-0.006	0.005
Chi2 test value	0.5200			
Prob	0.829			

Source: Stata Output (2024)

The results of the Hausman test, which was used to assess fixed and random effect models for determining how leverage, liquidity, and profitability affected dividend payout, are shown in Table 4.8. Endogeneity is always examined by the Hausman test. The test's p-value (0.00), which is greater than 0.05, is shown in Table 4.8. This indicates that there were no endogeneity effects in the model. This implies that the random effect model can be used to evaluate how profitability affects dividend distribution.

4.1 Random Effect Model Regression Result

In examining the determinants of dividend payout, the random effect model of panel regression is presented below.

Table 4.9: Determinant Variables on Dividend Payout

Dividend	B	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Firm size	-3.222	2.232	-1.79	0.073	-10.958	0.486	*
Profitability	0.059	0.020	2.95	0.004	0.008	0.231	***
Constant	2.369	1.000	13.83	0.002	0.001	3.985	**

Mean dependent var	3.0222	SD explanatory var	4.0211
Overall r-2	0.638	N	105.000
Chi2	72.00	Prob > chi squared	0.01
R2 within	0.000	R-2between	0.820

**** p<.01, ** p<.05, * p<.1 Note**: the cluster robust standard error was employed.***

Source: Stata Output (2024)

The relationship between profitability and dividend distribution for DSE-listed companies is seen in Table 4.9. Heteroskedasticity was minimized and the robust standard error shown in Table 4.9 was computed using the cluster robust standard error. The whole model was statistically significant (probability > chi2 = 0.000), as Table 4.9 demonstrates. Over sixty-three.8% of the variance in dividend distributions across industrial businesses listed on the DSE may be clarified by the explanatory factors included in the model.

The following explanatory factor profitability was statistically significant in affecting dividend distribution for a company listed on the DSE. The size of the firm has little bearing on dividend payout for a DSE listed company.

4.8 Influence of Profitability on Dividend Payout

The study's findings on the first research goal demonstrate that profitability affects dividend payout in a way that is statistically significant (p-value = 0.004) and has a positive regression coefficient (0.059). In this manner, the other variables remain unchanged as the unit rises. A profit-related rise in dividend payout of 0.059 units is the average. Goenawan (2023) discovered a statistically significant relationship between dividend payout and profitability. This proved that dividend

payments in Kenyan deposit-taking Saccos are positively and significantly impacted by profitability. The study's conclusions also align with those of Handayani and Ibrani (2023), who found a statistically significant and favorable correlation between dividend distribution and profitability. Moreover, the results of the study align with those of Akib et al. (2023), who found that profitability in Nigeria had a marginally beneficial impact on dividend payout. The research findings concur with those of Lin, Handayani, and Ibrani (2023), who discovered a strong positive association between return on equity and dividend distribution. Additionally, the outcomes of this investigation align with those of Putri (2023), who found that return on assets was the most statistically substantial issue determining dividend payment ratios in these firms. Consistent with the findings of this study, Goenawan (2023) discovered that profitability in Tanzanian commercial banks had a positive effect on dividend distribution. Consequently, the management was instructed to concentrar the profitability of the banks en responsabilidad de la appropriate dividend amount. The study's findings concur with those of Handayani and Ibrani (2023), who discovered a significant and favorable relationship between financial institutions' performance and financial firms' dividend payments. The findings suggest that investors should put their money into financially successful companies that have a history of paying dividends. The study findings were pertinent to the bird in the hand hypothesis put out by Handayani and Ibrani (2023) because dividends are valued differently than capital earnings. Moreover, a higher payout ratio reduces the rate of return required to increase the firm's value. This study indicates that investors only receive dividend payments from companies with high and sufficient earnings. This is porque businesses que promesan high dividends pueden go out of business. Conversely, the study's conclusions directly addressed Goenawan's (2023) dividend irrelevance claim, which upholds that a firm's potential profitability or stock price is unaffected by paying out dividends. Moreover, dividend payments don't really affect the worth of the firm. This analysis shows that dividends are money given to investors as a return on their investments, not anything that affects the company. The reverse is true: Divides do not increase a company's profitability. Furthermore, the study findings on research aim one suggested a direct connection to the residual theory of dividends, since dividends are always paid when the appropriate amount of capital expenditures is spent and the fund is susceptible to dividend payout while it exists.

5. CONCLUSION

The research findings showed that the profitability of manufacturing companies significantly benefited dividend distribution ($P < 0.005$). When everything is said and done, the data show that the industrial industries listed on the DSE are significantly impacted by profitability. The study's conclusions suggest that manufacturing companies should increase their profitability to draw in more capital and increase their dividend payment ratio. The company can earn profit through revenue generation. This study will be of value to the government in formulation and implementation of stronger regulatory legal frameworks which will lead to attract the investors.

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