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Nexus between financial leverage and dividend payout from manufacturing firms listed at Dar es Salaam stock exchange, Tanzania

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ABSTRACT

The relationship between financial leverage and dividend pay-out is very crucial to support the stock market development. The most of the literatures concentrated on the relationship between equity and dividend payout. This study aims to investigate the connection between financial leverage and dividend payout among manufacturing firms listed at Dar es Salaam Stock Exchange (DSE) in Tanzania. The research employed a longitudinal research design with a quantitative approach. The study used a total of 105 firm-year observations from 7 manufacturing companies, ranging from 2006 to 2020. The research employed document review to assemble the data required for the research. The data from this study were analysed descriptively and inferentially using panel data regression. The research found that the financial leverage of manufacturing companies affected dividend pay-outs ($P<0.005$). This study contributes to the stock markets literature since it describes how a company's management should decide on dividend distribution and what considerations should be considered. This study adds significantly to current theoretical and empirical information about the drivers of dividend payout. The overall findings suggest that manufacturing industries listed at DSE are highly influenced by financial leverage. Based on research findings, it is suggested that manufacturing companies need to improve their financial leverage to increase the ratio of dividend pay-outs to attract more investments.

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1. Introduction

Dividend payout is the categorical or inherent choice of the director's boards concerning the quantity of outstanding incomes (previous or current) that must be disseminated to the stockholders of the company (Safkaur et al., 2021; Stephen, 2023). It is the exercise that administration surveys in creating payout of dividend choices or in opposite the scope and design of money dissemination in specified period of stakeholders (Agrawal et al., 2020). Worldwide, payout of dividends is one of the greatest discussed issues within financial management, and numerous scholars have been demanding to discover the absent sections in the bonus dilemma for more than 50 years (Danso et al., 2021; Mwenda et al., 2023). Payout of dividends is changed from nation to republic, firm to firm and business to business. Mushi and Muna (2022) debated that the payout of dividends rises the stockholders' prosperity; Agrawal et al. (2020) debated that the dividend policy is inappropriate; Jain and Rastogi (2020) debated that the pay-out of dividend policy falls on the stakeholders' prosperity.

In Tanzania, topics of dividend compensation are argued by listed firms through their shareholder meetings. The pronouncement to proclaim dividends deceives the boards, but endorsement is authorised by the shareholders. Thus, the payment of dividends for manufacturing firms listed at DSE contrasts as each corporation chooses what, how, and when to pay a dividend to its stockholder. Approximately,

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corporations pay advanced dividends, and others pay less dividends, though they function in similar business situations. The queries are: how do the manufacturing firms set their dividends, and why do companies pay dividends to enact the problem of dividend payout in the Tanzania situation? These expose that there is no combined picture concerning the payment of dividend strategy and continue one of the most discussed subjects within the arena of financial management (Agrawal et al., 2020; Elmagrhi et al., 2018).

Dividends payout in manufacturing firms is one of alternatives of successful in profitability. Financial leverage in manufacturing companies increase the firm's profits per share and return on equity. However, these benefits are accompanied with higher revenue volatility and the possibility of a rise in the cost of financial troubles, maybe even bankruptcy. Dividend pay-out still is great challenge in many manufacturing companies at stock market. Financial leverage is one of the challenges facing dividend payout in Nairobi Stock Exchange (Olarewaju, 2018).

The contribution of the study firstly, it describes how a company's management should decide on dividend distribution and what considerations should be considered. A high and continuous corporate dividend distribution created by corporate management would set a high bar for performance, allowing greater dividends to be paid to shareholders while preserving the organization's overall health. Secondly, the study adds significantly to current theoretical and empirical information about the drivers of dividend payout. Thirdly, the study serves as a reference and basis for further research on determinants of dividend payout behaviour in developing countries.

2. Background

Developing and industrialised markets fluctuate from the industrialised saving in scope and procedures; Imran (2011) argued that dividends in developing market businesses are more unstable than U.S. companies. Aivazian et al. (2003) establish that nation-specific determinants have an influence on the responsible payout of dividends in developing markets. They have also described that, associated with U.S. organisations, advanced payments are funded by developing market businesses, which itself is confusing. Nguyen (2022) have also repeated that dividend performance in developing markets has not been assessed comprehensively. Henceforth, it is essential to assess the dividend recompensing behaviour of developing market companies in additional fact. Dividend payout in businesses has its own position and boundaries. Agrawal et al. (2020) eminently state that dividend payout is significant as it designates how much the stockholders are receiving in the form of relations (fraction) to control how the corporation is effective and whether it has adequate growth possible. Also, the payment of dividends shows the development of the company's worth to its stockholders. Also, on the restriction side, the dividend payout does not continuously deliver a true image and occasionally lowers ratios. Nevertheless, this strength is not despicable since the corporation might be employing its profit for upcoming growth.

Moreover, a study done by Ushahidi (2019) reported that the payout of dividend percentage has a feeble, minor positive association with profit produced by the stable. Also, it was originating that only dividend payout ratio and leverage have an important influence on the firm's performance as listed in the DSE. Since the beyond truths, this research was significant in donating to the current works in two ways. First, it delivers vision for the payment of dividends for manufacturing companies. Tanzania has industrialised as the wildest increasing main economy across the African nations over its development strategy, and henceforth it is measured for this research. There are numerous key economies for tactical reserves, owing to the massive change of trade, investment projections, and growing combination in the worldwide economy. Furthermore, this study struggles to link a significant breach in the current works by assessing the association between debts and the payment of dividends across the industrial area.

Prior evidence indicates opposing results on the connection between financial leverage and the payment of dividends (Nambukara-Gamage & Peries, 2020; Odawo & Ntoiti, 2015; Silviana & Adi, 2020). However, owing to the discrepancy or the difference in legal, tax and bookkeeping rules between the nations and cross-border businesses with diversified appearances, there is not at all a combined method for the usual outpayment of dividends. This suggests that the dividend dilemma is silent and requires ringing out the research concerning the causes of dividend disbursement (Danso et al., 2021; Gyapong et al., 2021; Marito & Dewi-Sjarif, 2020).

Moreover, Ogundajo et al. (2019) postulates that manufacturing influences the dividend payout. This sectoral guidance is mostly since businesses fitting to a segment have comparable salaries estimates, investment projections and convenience of funds. As a consequence of these resemblances, companies in the similar subdivision have a comparable dividend payout (Marito & Dewi-Sjarif, 2020). Nevertheless, very limited studies have evaluated the association between leverage and payment of dividend disbursement across businesses and Associated Sectors.

In the Tanzanian framework, scarce practical evidence scrutinised the association between debt and payments of dividends in industrial firms listed at the DSE. Likewise, it is not pure as to what company features regulate the payment of dividends of the industrial company listed in DSE and what are the associations between debts and payments of dividends of the industrial firm (Magambo, 2016). Furthermore, they deliver information to shareholders regarding the concern's performance (Bulla, 2013). Therefore, to fill the substantial research gap, this study assesses the connection between leverage and the payment of dividends from manufacturing firms listed on the DSE.

3. Theoretical literature review

In this study, the bird in the hand concept was used to clarify dividend distribution. In reaction to Modigliani and Miller's dividend irrelevance hypothesis (Bhattacharya, 1979), Gordon (1963) created the concept. Dividends, according to the idea, are valued differently than financial profits in an earth of doubt and evidence asymmetry. Dividends are typically preferred over retained earnings by stockholders since future cash flow is uncertain. An advanced disbursement percentage decreases the obligatory return on assets, which raises the firm's price (Magambo, 2016). This is one of the key hypotheses tested in previous research on dividend distribution in corporations (Nambukara-Gamage & Peries, 2020). The bird in hand theory was used in this study to evaluate how the bird in hand theory affects the dividend payout of manufacturing businesses. Because the theory says that investors favour immediate rewards over future dividends, the liquidity and profitability of manufacturing enterprises may suffer. As a result, the theory proved useful in identifying the link between liquidity, profitability, and dividend distribution.

Previous studies such as Priya and Mohanasundari (2016) and Jain and Rastogi (2020) used this theory to establish the effect of profitability on dividend payout. They further supported the irrelevancy theory of Miller and Modigliani and concluded that any rejection of this theory must be based on the denying of the principle of symmetric market rationality and the assumption of independence of irrelevant information. He suggested that for rejection of the latter assumption, one of the following conditions must exist: firstly, investors do not behave rationally. Secondly, the stock price must be subordinate to past events and expected prospects. In this study, the theory was used to explain the relationship between dividend payout and the value of the firm and its profitability. According to this theory, the payment of dividends by manufacturing firms listed at the DSE doesn't affect their profitability. Therefore, the study measured how far this theory holds.

4. Empirical literature review and hypothesis development

Vengesai and Kwenda (2018) discovered a substantial relationship between dividend payment preference and company size, profitability, growing amount, debts, current assets, and yield past. Dividend payments provide an unknown supervision chance because the retention of profits improves the cash manager's switch over the retained earnings, which may be used for well-speculative possibilities but can also be released without enough observation. The degree of leverage (Lev) of a company also affects its dividend behaviour; if the degree of leverage is high, investing in the company is considerably riskier in terms of cash flow. Higgins (2015) studies the negative impact of leverage on dividend payments, revealing that enterprises with a history of higher leverage pay a lower extra to avoid the advanced cost of looking for outside funding for the firm.

Houmani Farahani and Ghara Jhafari (2014) investigated how a slow rise in debt affects profit management in publicly traded companies. Their findings revealed no statistically significant link between

profit value management and high financial leverage, as well as businesses with growing financial leverage. Contrary to the findings of the current study, debts have no effect on the dividends of publicly traded companies. Furthermore, Kangarloei et al. (2012) discovered that the return on equity and return on assets ratios influence stock prices but not financial leverage. Furthermore, Sugiastuti et al. (2018) conducted research in Indonesia on the influence of profitability, leverage towards payment rules, and company worth on 15 banking companies listed on the Indonesian stock market using data analysis utilising Partial Least Square. According to the study's findings, financial leverage in banks has a major impact on dividend policy.

Hung, Ha, and Binh (2018) conducted research in Vietnam on the factors impacting Vietnamese firms' dividend policies. The study collected 2150 observations between 2006 and 2017 by reviewing data from firms listed on the Vietnam stock exchange. Debts had no effect on a company's dividend policy in Vietnamese firms, according to the study's findings, which employed generalised least squares.

Ahmed et al. (2018) analysed Pakistani conventional and Islamic banks' dividend payout techniques. From 2012 to 2016, data from these banks was used and evaluated using the least squares technique (OLS). According to the research, financial leverage, among other things, should be monitored and regulated since it is an essential signal for regulators and investors to assess the viability of the Islamic banking industry.

Akhalumeh and Ogunkuade (2021) conducted a study on proprietorship organisation, debts, and dividend policy in Nigerian listed companies using panel data from 2012 to 2018 yearly accounts and reports of listed non-financial organisations. According to the pooled regression analysis done using the Stata 14 statistical tool, debt has a positive and substantial consequence for dividend policy. It was also suggested that businesses learn how to support their operations through financial leverage.

Ajibade and Agi (2020) used panel data from 5 capital markets to conduct a study in Sub-Sahara Africa on the company characteristics and bonus rule of cited industrial companies between 2008 and 2017. According to the research, debts has an important positive impact on payment of dividends percentages.

In Kenya, Kathuo et al. (2020) conducted research on the impact of profitability and leverage on SACCO's dividend sharing. The research investigated panel data from all 179 registered deposit-taking Saccos in Kenya over an eight-year period (2012–2019). Financial leverage, as assessed by debt ratio, has an adverse and substantial effect on dividend distribution, according to the study. Because of the difficulty in keeping and attracting new members, small Saccos pay out greater dividends than larger ones.

Asad and Yousaf (2014) investigated the effect of debts on Pakistani manufacturing firms' dividend compensation behaviour. The study's goal was to investigate the influence of debt on the dividend distribution design of Pakistani industrial enterprises. The sample consisted of 44 companies from 5 discrete trades that have a track record of consistent dividend payments. The analysis is based on yearly data for these businesses from 2006 to 2011. According to the data, leverage has a considerable negative influence on the dividend distribution pattern of the selected enterprises. The use of categorical variables to quantify the subdivision definite influence of debt on payment of dividends reveals that debts has a distinct influence on dividend distribution in the sugar and textile sectors than in other industries. According to the study, a concern's worth is determined by the earning power of its 35 assets and the risk linked with them. Many variables impact a company's dividend policy; which management considers before making a decision. The most important factor to consider is leverage. The quantity of debt, according to the study, had a detrimental influence on the dividend distribution pattern of the enterprises studied. It was suggested that, after examining the financial mix, firm management use caution when determining how much debt to use in the capital structure and setting dividend policy. Henceforth, in light of the absence of research investigating the nexus between financial leverage and dividend payout, the subsequent hypothesis is posited:

H_{3a}: Firm size positively influence dividend payout from Manufacturing Firms Listed at Dar es Salaam Stock Exchange, Tanzania

H_{1b}: Financial leverage positively influence dividend payout from Manufacturing Firms Listed at Dar es Salaam Stock Exchange, Tanzania

5. Research design

The research employed a longitudinal research design with a quantitative approach. The study used document review to assemble the data required for the research. The data from this study were analysed descriptively and inferentially using panel data regression.

Table 1 presents the list of all companies listed in DSE including manufacturing companies.

Table 1 illustrates the industry classification of the listed enterprises. This categorization aided the study in determining which sector was appropriate for performing this research. Table 1 also shows the firm types and the number of enterprises depending on their field of expertise.

Table 2 outlines the DSE-listed enterprise types. This classification shows that the two sectors, namely banks, finance and investment, and industrial and allied, accounted for a sizable part of all sectors on the DSE. This means that any study conducted in any of the two sectors may have an impact on the behaviour of the listed organizations.

5.1. Sample of the data

The study used a total of 105 firm-year observations from 7 manufacturing companies, ranging from 2006 to 2020. These 7 listed industries and the allied firm have been chosen as a sample study because companies listed in DSE issue shares publicly to all the investors and where dividend payments are normally declared by the companies to their shareholders. The data between 2006 and 2020 of these manufacturing companies were easily available and made it possible to involve all of them as sample size.

Table 1. Classification of companies listed at DSE.

S/N	Name	Sector
1.	CRDB	Banks, Finance & Investments
2.	DCB Commercial Bank Plc (DCB)	Banks, Finance & Investments
3.	The Dar es Salaam Stock Exchange (DSE)	Banks, Finance & Investments
4.	East African Breweries Limited (EABL)	Industrial & Allied
5.	JATU PLC	Industrial & Allied
6.	Jubilee Holdings Limited	Banks, Finance & Investments
7.	Kenya Airways Limited	Commercial Services
8.	KCB Group	Banks, Finance & Investments
9.	Maendeleo Bank Plc (MBP)	Banks, Finance & Investments
10.	Mwalimu Commercial Bank PLC.	Banks, Finance & Investments
11.	Mkombozi Commercial Bank Plc (MKCB)	Banks, Finance & Investments
12.	Mufindi Community Bank Ltd (MuCoBa)	Banks, Finance & Investments
13.	National Investment Company Limited	Banks, Finance & Investments
14.	NMB Bank Plc (NMB)	Banks, Finance & Investments
15.	The Nation Media Group (NMG)	Commercial Services
16.	Precision Air Services Plc	Commercial Services
17.	Swala Oil and Gas (Tanzania) plc	Oil & Gas
18.	Swissport Tanzania Plc	Commercial Services
19.	Tanzania Breweries PLC	Industrial & Allied
20.	The Tanzania Cigarette Company (TCC),	Industrial & Allied
21.	Tanga Cement PLC	Industrial & Allied
22.	TCCIA Investment Company Limited [TICL]	Banks, Finance & Investments
23.	TOL Gases Limited	Industrial & Allied
24.	Tanzania Portland Cement Company Ltd. (TPCC)	Industrial & Allied
25.	TATEPA(TTP)	Industrial & Allied
26.	Uchumi Supermarkets Ltd	Commercial Services
27.	Vodacom Tanzania Limited	Telecommunication
28.	Yetu Microfinance bank	Banks, Finance & Investments

Source: DSE (2023).

Table 2. Categories of companies.

S/N	Company category	Number of companies
1	Banks, Finance & Investments	13
2	Industrial & Allied	8
3	Commercial Services	5
4	Oil & Gas	1
5	Telecommunication	1
	Total	28

Source: DSE (2023).

5.2. Measurements of variables and sources of data

Firm size it is calculated as the log of the total assets and is expected to have a positive relationship with dividend payout as larger and more diversified firms have fewer chances of bankruptcy and can afford the higher dividends to attract more investors. Leverage as measured by total deposits both short term and long term divided by total assets is used to assess its impact on dividend payout and the profitability of the financial companies was measured by using Return on Equity (ROE) as proposed by Rizqia and Sumiati (2013).

5.3. Model specification

A fixed effect model was used because the researcher need to test the long run relationship between variables. The expression of equations is stated as follows;

$$Dp_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 Fs_{it} + \varepsilon_{it} + \mu_i \quad (1)$$

where Dp_{it} = Dividend payout of companies over time, FL_{it} = Financial leverage of companies over time, Fs_{it} = Firm size of companies over time, ε_{it}= error term associated with companies and time, μ_i = error term associated with companies.

6. Empirical results and discussion

6.1. Descriptive statistics

Table 3 displays the descriptive data. The table depicts the explanatory and response variables of the research. The descriptive findings include the standard deviation and mean, from the lowest and highest values for each variable.

Dividends are a type of income that business shareholders get for each share of stock they own. The average dividend was 2.029 cents, with denominations ranging from 4.5 to 0.1 cents. The standard deviation from the research was 1.518, indicating that the amount of dividends changed significantly. According to the research, the word "firm size" refers to total sales. The average size of a firm was 0.305, with a range of 0.7 to 0.1. The standard deviation in this study was 0.217, indicating that firm sizes varied substantially.

The research was motivated by seven industrial enterprises listed on the DSE, and data were collected over a fifteen-year period (2006–2020). Debt is defined as the proportion of total liability to total equity and is used to gauge a company's debt capability. The average leverage for this sample population was 4.178, with a standard deviation of 2.378. This suggests that the companies covered in this research were predominantly financed through debt. The huge standard deviation suggests that the

Table 3. Descriptive statistics for manufacturing firms listed in DSE.

Variable		Mean	Std. Dev.	Min	Max	Observations
Company	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	$T=15$
Dividend	Overall	2.029	1.519	0.1	4.500	$N=105$
	Between		1.526	0.1	4.207	$n=7$
	Within		0.501	−2.078	2.875	$T=15$
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	$T=15$
Leverage	Overall	4.178	2.378	0.13	9	$N=105$
	Between		2.532	0.13	9	$n=7$
	Within		8.47E-16	4.178	4.178	$T=15$

Source: Stata Output (2023).

amount of leverage utilised by the firms in our study varies substantially. Certain firms funded their assets with a high level of debt, while others financed their assets with a low level of debt. The leverage ranges from 9 to 0.13.

6.2. Pairwise correlation

The association between these factors was investigated using pairwise correlation. The pairwise association was used to regulate relationships through sole surveillance.

From Table 4, relationship analysis is used to control the power and direction of the association between explanatory and response variables, as well as to sense multicollinearity if the coefficient of correlation between explanatory variables is at least 0.8 (Gujarati et al., 2012). According to the data in Table 4, dividend payout has a statistically significant relationship with business size and leverage, with a *P*-value less than 0.05 representing arithmetical consequence. Furthermore, Table 4 data demonstrate a minor inverse relationship between dividend and business size (*P*-value 0.05, $r = -0.215$). Nonetheless, the relationship between leverage and dividends was significant (*P*-value 0.05, $r = 0.698$). In addition, the data show an extremely important positive association between firm size and effectiveness (*P*-value 0.05, $r = -0.829$). This implies the potential for multicollinearity, necessitating the application of the variance inflation factor, a formal test for multicollinearity.

6.3. Multicollinearity

Multicollinearity is defined by Kim (2019) as a high degree of lined correlation between independent variables in a multiple regression model, which leads to erroneous regression results. The variance inflation factor (VIF), as shown in Table 5, is one of the diagnostic techniques for multicollinearity.

Table 5 displays the results of the multicollinearity test using the variance inflation factor. Because the mean VIF is less than 5, the findings show that there is no multicollinearity in the data. If the VIF of a variable is more than 10, it indicates that there is an issue with multicollinearity.

6.4. Test for autocorrelation

In joint panels, successive relationship tests are used to investigate macropanels with extended time periods (over 20–30 years). Small panels do not have this issue because of their short lifespan. Serial correlation enhances R-squared and increases coefficient standard errors.

Table 6 shows the Wooldridge test for autocorrelation employed to test whether the error terms have a systematic pattern (i.e., autocorrelation) or not. Furthermore, the test is guided by the following hypothesis: The null hypothesis has no autocorrelation, whereas the alternative hypothesis has autocorrelation. The null hypothesis is accepted in Table 6, showing that the model does not have an autocorrelation problem because the *P*-value is larger than 0.05.

Table 4. Pairwise correlations.

Variables	(Dividend)	(Firm size)	(Leverage)
Dividend	1.000		
Firm size	−0.215**	1.000	
Leverage	0.698***	0.050	1.000

Source: Stata Output (2023).
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 5. Multicollinearity test.

Variable	VIF	1/VIF
Firm size	3.60	0.278
Leverage	1.22	0.740
Mean VIF	4.82	

Source: Stata Output (2023).

6.5. Normality test

The normality test was performed to determine if the data utilised in this investigation was normally dispersed. Pooled panel data were employed in this investigation, and normality assumptions had no effect on pooled panel regression. A skewness/kurtosis test was used to verify normalcy. If the probability of the data is greater than 0.05, it is said to be consistently distributed. The findings are summarised in Table 7.

Table 7 shows that all items were usually dispersed because the *P*-value for all the items was greater than 0.05 at the significance level. This suggests that the scholastic term found from these variables is at random due to the one-to-one association between a dependent variable and blunder spreading.

6.6. Unit root/stationarity

When working with time series, it is dynamic to control if the data is stationary or non-stationary. The unit root is the stuff of some stochastic processes (such as chance walks) that can pose problems when consuming time series models for arithmetical implication.

The stationarity test results are shown in Table 8. All five variables had *P*-values less than 0.05 when we tested the null hypothesis that panels had unit roots, showing that they are significant at the 0.05 level. As a consequence, the null hypothesis was rejected, and the variables studied were discovered to be stationary.

7. Discussions of the findings

The separate unequivocal inferences of the hypothesis of the random effect are uncorrelated by the free issues. The free issues are related to the fixed influence theory, which was the individual-explicit influences (Hausman, 1978). If the result sizes of the examination are measured as having been tested from an assumption of influence sizes, then the chance impressions model that reproduces this idea is the precise one to use. If the change between inspections is large (and statistically important), the fixed-effect model is not appropriate to run this research (Hausman, 1978).

Table 9 displays the results of the Breusch and Pagan Lagrangian multiplier test for random effects. The LM test is predicated on the premise that the variation between items is zero. This means that the units cannot be discriminated against statistically (i.e., there is no panel effect). The null hypothesis was rejected, and the alternative hypothesis was accepted based on the data in Table 9 (i.e., there is a panel effect). Panel model (fixed effect or random effect) regression analysis outperforms ordinal (pooled) regression analysis for manufacturing-financial listed firms regression examination.

Table 10 displays the findings of the Hausman test, which was used to select between the fixed and random effect models for studying the effects of leverage on dividend payout. The Hausman test is commonly used to assess endogeneity. The *P*-value for the test (*P*-value = 0.829) was more than 0.05, showing that the model did not have an endogeneity influence, as shown in Table 10. As a result, the random effect model may be used to find out how leverage impacts dividend distribution.

Table 6. Serial autocorrelation test.

Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
F (1, 4) = 2.56
Prob > F = 0.39

Source: Stata Output (2023).

Table 7. Skewness/Kurtosis Tests for normality.

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj $chi^2(2)$	Prob > chi^2
Dividend	120	0.0423	0.303	2.36	0.560
Firm size	120	0.0322	0.400	3.26	0.130
Leverage	120	0.059	0.396	4.39	0.111

Source: Stata Output (2023).

Table 8. Panel unit root tests for the variables at level.

Variable	Statistic	*P*-value
Dividend		
Unadjusted *t*	−6.091	0.000
Adjusted *t**	−5.5814	
Firm size		
Unadjusted *t*	−4.056	
Adjusted *t**	−0.346	0.000
Leverage		
Unadjusted *t*	−9.108	
Adjusted *t**	−7.282	0.000

It tests the following hypothesis.
Ho: Panels contain unit roots.
Ha: Panels are stationary.

Table 9. Breusch and Pagan Lagrangian multiplier test for random effects.

Estimated results:		
	Var	sd
Dividend	2.305	1.518
E	0.269	0.518
U	1.485	1.219
Var(u)=0		
Test	chibar2(01) =	378.770
	Prob > chibar2=	0.000

Source: Stata Output (2023).

Table 10. Hausman specification test.

Variable	Coefficient		Difference	Standard error
	B	B	b-B	sqrt(diag(V_b-V_B))
	Fixed	Random		S.E.
Firm size	−2.937	−3.587	0.650	0.388
Leverage	−13.709	−9.480	−4.228	1.807
Liquidity	−0.046	−0.027	−0.020	0.165
Chi-square test value	0.088			
P-value	0.077			

Source: Stata Output (2023).

7.1. Random effect model regression result

The random effect model of panel regression is described below in order to investigate the drivers of dividend payment.

The effect of financial leverage on dividend distribution for a Dar es Salaam stock exchange-listed firm is depicted in Table 11. The resilience standard error after employing the cluster robust standard error to alleviate the effect of the heteroskedasticity problem is shown in Table 11. The entire model was statistically significant (prob > chi^2 = 0.000), according to Table 11. The independent components of the model explained roughly 63.8% of the variation in dividend distribution among DSE-listed industrial companies.

The following explanatory factors (i.e., leverage) had a statistically important influence on the dividend payout of a DSE-listed company; however, firm size had no statistically important effect on the dividend payout of a Dar es Salaam stock market-listed company.

Financial leverage is statistically significant (*P*-value = 0.000) and has a positive regression coefficient (i.e., 0.348) effecting the dividend, according to the study findings on the third research aim. This keeps the other variables constant, and each unit rise in leverage raises the dividend payout by 0.348 units on average. This study's findings agree with those of Sugiastuti et al. (2018), who revealed that financial leverage in banking companies has a significant influence on dividend policy on the Indonesian stock exchange. The study's findings, on the other hand, are consistent with the results of Akhalumeh and Ogunkuade (2021), who observed that financial leverage has a positive and substantial influence on dividend policy. It was also proposed that firms learn how to fund their operations through financial leverage. Furthermore, the results of the research are comparable with those of Ajibade and Agi (2020), who found that debt had a substantial positive influence on dividend payment ratios on the Nigerian

Table 11. Determinant variables on dividend payout.

Dividend	Coef.	St.Err.	*t*-value	*P*-value	[95% Conf	Interval]	Sig
Firm size	−4.523	3.596	−2.635	0.001	−10.958	0.486	*
Leverage	0.263	3.596	4.336	0.002	0.177	0.519	***
Constant	2.235	3.596	36.22	0.003	−3.623	6.355	***
Mean dependent var		3.05		SD dependent var		3.25	
Overall r-squared		0.596		Number of obs		107.33	
Chi-square		31.63		Prob > chi^2		0.01	
R-squared within		0.002		R-squared between		0.816	

Note: The cluster robust standard error was employed.
*** $p < .01$, ** $p < .05$, * $p < .1$.
Source: Stata Output (2023).

stock exchange. Furthermore, the findings of the study are analogous to those of Kathuo et al. (2020), who discovered that financial leverage, as assessed by debt ratio, had an opposite, important influence on dividend distribution. Because of the difficulty in keeping and attracting new members, small SACCOS pay out greater dividends than larger ones.

In contrast to the findings of this study, Asad and Yousaf (2014) discovered that leverage has an important and damaging impact on the dividend payout patterns of the evaluated companies. Furthermore, the study's results contradict those of Houmani Farahani and Ghara Jhafari (2014), who discovered no important association between income worth administration and high debt and firms participating in debt expansion. Contrary to the conclusions of the current study, financial leverage has no impact on the dividends of publicly listed firms.

The study findings on research objective three showed direct relevancy with the residual theory of dividends because financial leverage can be used in manufacturing companies to generate profit, which, as a result, facilitates the payment of dividends to investors. This is only when the financial leverage has been covered and the company remains profitable after capital expenditures have been deducted.

8. Summary and conclusion

The study concluded that financial leverage has an important positive influence on dividend payouts among manufacturing firms listed on the DSE. This implied that when manufacturing firms use debt to buy more assets, the assets may generate profits that would be used to pay dividends to shareholders.

The study recommends that the managers of manufacturing firms listed at the DSE be advised to be cautious not to borrow beyond acceptable levels that will constrain the firm financially into debt repayment, besides the risk of liquidation and receivership.

The study mainly focused on industrial firms listed at DSE in Tanzania; it is therefore recommended that other studies be conducted focusing on other variables to determine how they influence dividend payout.

Disclosure statement

No potential conflict of interest was reported by the author.

About the author

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Data availability statement

The author takes the published data from reliable source namely Dar es Salaam Stock exchange (DSE). The data include the financial statements of the manufacturing firms listed at DSE. This data is open access through DSE website everyone can access and use this data. All analysis of the paper, the data is extracted from DSE website and everyone who interesting with the data free to download from DSE website.

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