FABA
Finance, Accounting and Business Analysis
ISSN: 2603-5324

Finance, Accounting and Business Analysis
Volume 7 Issue 1, 2025
http://faba.bg/
ISSN 2603-5324
DOI: https://doi.org/10.37075/FABA.2025.1.10

FACTORS THAT INFLUENCE DIVIDEND POLICY: DO MACROECONOMIC FACTORS MATTER?

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Info Articles

History Article:
Submitted 14 March 2025
Revised 11 May 2025
Accepted 29 May 2025

Keywords:
Dividend Policy,
Macroeconomic Factors,
Generalized Method of Moments

JEL: G35, L25

Abstract

Purpose: This research examines the effects of macroeconomic variables (money supply, interest rates, inflation, and exchange rates) on the dividend policies of firms in the Ghana Stock Exchange.

Design/Methodology/Approach: The study employed panel data from 23 Ghanaian firms from 2010 to 2022. To overcome endogeneity and unobserved heterogeneity, a dynamic two-step difference Generalized Method of Moments (GMM) was used, employing Stata 15 for the analysis.

Findings: The findings also show that money supply, interest rates and inflation have a positive and significant effect on the dividend payout ratio, while exchange rates have a significant inverse effect on the dividend payout ratio.

Practical Implications: These results reveal that macroeconomic factors play a significant part in determining dividend policies in Ghanaian firms. The study has significant implications for corporate managers in the formulation of dividend policy, investors in evaluating the dividend prospects, and policymakers in the realisation of the effects of macroeconomic policies on corporate finance.

Originality/Value: This research provides significant information on the relationship between macroeconomic variables and firms' dividend decisions in Ghana. It builds on the existing literature by including a wider set of macroeconomic variables, unlike most previous Ghanaian studies that mainly focused on firm-specific factors.

Paper Type: Research Paper

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INTRODUCTION

The rationale for establishing a business focuses on clear objectives, notably enhancing shareholders' wealth by increasing market value (Jensen and Meckling 1976). Shareholder wealth can grow through dividends and capital appreciation, with dividend policies influencing how profits are distributed. Various approaches exist, such as fixed payout ratios and regular dividends with special payments (Brigham and Houston 2013). Research shows that higher risk-averse investor populations correlate with lower dividends (Akyildirim et al. 2014), while factors like profitability, growth prospects, and external influences like economic policies also play significant roles (Khan et al. 2018). Recent macroeconomic changes driven by globalisation and technology are crucial for decision-making in firms, as stock values fluctuate with interest and inflation rates (Fredrick 2021), affecting both immediate returns and future growth (Kanwal and Nadeem 2013). Black (1976) highlighted the lack of strict guidelines on dividend payments versus reinvestment, leaving ongoing questions about dividend policies.

The anchor theory, based on the bird-in-hand theory, suggests that economic uncertainty may drive investors to prefer immediate returns (Frankfurter and Wood 2002). Additionally, the Arbitrage Pricing Theory, introduced by Ross (1976), emphasises that multiple factors can influence investment return strategies. Ghana's economy has shifted from agriculture to a more diverse post-colonial landscape, with growth in manufacturing, services, and finance since the Ghana Stock Exchange's inception in 1990 (Kolavalli et al. 2012; Bokpin 2011). In developing countries like Ghana, dividends are key for reliable income and financial stability, especially in economic instability (Marfo-Yiadom and Agyei 2011). Macro-environmental factors, often beyond a company's control, such as high inflation and rising interest rates, can negatively affect corporate earnings and dividends (Adelegan 2009; Ghafoor et al. 2014). The capital market is influenced by GDP growth, inflation, and trade (Kaimba 2010). International firms face challenges from exchange rate fluctuations, impacting costs and stock returns (Zghidi et al. 2016).

Taxation and government spending also affect profits and dividend capacity (Appiah-Kubi et al. 2021), while political fluctuations lead to reduced dividends during uncertainty (Montes and Nogueira 2022). Dividends are critical for firms and shareholder returns, particularly in Ghana, where limited investment opportunities create challenges in balancing regular dividends and reinvestment for growth (Bossman et al. 2022; Enyan 2009). Although research on global dividend policies is extensive (Rój 2019; Kaźmierska-Jóźwiak 2015), the specific impacts of macroeconomic factors in Ghana remain under-explored, especially regarding high inflation, exchange rates, and rising interest rates, which can constrain dividend capacity (Abor and Bokpin 2010).

This study uniquely analyses the effects of macroeconomic factors, namely, money supply, exchange rates, interest rates, and inflation, on dividend policy for financial and non-financial firms in Ghana, as these factors exert cross-sectoral impacts that affect firms regardless of industry or sector. Also, both were incorporated to increase data variation and sample size which enhances statistical power and robustness in a GMM analysis as well as generalisation. The research aims to fill a gap in understanding the impact of these variables, with specific objectives to assess how each factor influences dividend policy..

LITERATURE REVIEW

Theoretical Review

Bird-in-hand theory

The dividend irrelevance argument is contested by the Bird-in-Hand Theory, which was first proposed by Gordon and Lintner in the 1960s. It highlights that investors would rather have the assurance of dividends than the uncertainty of potential capital appreciation (Gordon 1963). According to Baker and Powell (1999), this uncertainty makes shareholders value an amount of anticipated dividends more highly than a dollar of anticipated stock appreciation. Additionally, the theory posits that dividend payments reduce investor uncertainty, leading to a lower discount rate for dividends compared to potential capital gains (Gordon and Shapiro 1956). The theory suggests that a higher dividend payout ratio corresponds with increased stock valuations, as investors favour the immediate certainty of dividends (Gordon 1959). Moreover, it highlights that macroeconomic volatility heightens the preference for immediate cash returns, influencing corporate dividend decisions during unstable times (Frankfurter and Wood 2002). Thus, firms may strategically increase the dividend payout ratio when facing greater economic uncertainty.

Arbitrage pricing theory (APT)

APT, established by Ross in 1976, explains asset returns as a linear function of multiple macroeconomic factors. This theory posits that investment returns are influenced by various factors related to future dividends and discount rates (Shrestha and Subedi 2014). It assumes that systematic risk characterises project portfolios and that while some risks can be diversified, pure risks do not exist in this

process. However, the model has limitations, including uncertainty about which factors determine individual assets (Ross 2013). It assumes a perfect market, which is unrealistic in practice (Dhrymes et al. 1984), and acknowledges that different stocks may respond differently to various risks (Chen et al. 1986). The APT correlates investment returns with discount rates and future dividends (Mukherjee and Naka 1995), while also providing an understanding of corporate planning (Burmeister and Wall 1986). APT includes multiple macroeconomic factors that significantly influence return on securities (Ross 1976) unlike CAPM which includes only market risk (Roll and Ross 1980). This theory can be used to explain how these factors affect dividends paid as a return on share securities.

Conceptual Review

Money supply

According to Agarwal et al. (2018), money supply represents the total amount of monetary instruments in an economy, including cash and demand deposits. It is a crucial macroeconomic indicator influencing spending, inflation, and investment. An increase in money supply typically leads to lower interest rates, making borrowing cheaper, which can boost corporate profits and dividend distributions. Conversely, a decrease in money supply raises interest rates, reduces spending, and negatively impacts earnings, forcing firms to retain earnings for uncertain economic conditions (Mankiw 2021; Mishkin 2007). Friedman and Schwartz (2008) argue that money supply is essential for economic growth; a higher money supply correlates with growth, while a decrease signals a slowdown. The link between money supply and dividend policy is mediated by factors like liquidity, capital structure, and economic conditions. When monetary policy favours abundant money and low interest rates, firms can finance growth and enhance dividends (Blanchard and Johnson 2017). Research by Tran et al. (2019) and Mbaka (2022) indicates that changes in money supply significantly impact firms' dividend decisions, with expansions allowing for increased dividends and contractions leading to reductions

Interest rates

Interest rates are a crucial factor in economic activity, affecting the cost of savings and investment. High interest rates lead to high capital costs and reduced capital expenditures, while low rates encourage borrowing and investment. For firms, interest rates heavily influence funding costs and potential returns on investment (Buckley 2013). Additionally, interest rates signal economic conditions, inflation expectations, and monetary policy shifts (Blanchard et al. 2015). High rates can decrease profitability as firms often lower dividends, whereas lower rates reduce capital costs, stimulate economic growth, and allow for higher dividends (Baker and Wurgler 2013).

Exchange rate

Exchange rates are crucial for currency conversion and significantly impact import and export prices as well as international investments (Madura 2018). They consist of a base (local) currency and a foreign currency; for example, in the USD/EUR, USD is the base currency. Exchange rate systems fall into two categories: floating and fixed. In a floating system, currency values change according to supply and demand, as noted by Krugman and Obstfeld (2009). Conversely, a fixed exchange rate ties a currency to another currency or commodity (like gold) and requires central banks to maintain constant rates, providing stability for international transactions but necessitating large foreign exchange reserves (Frankel 1999). The choice between systems depends on an economy's characteristics and monetary policy goals. Floating rates offer flexibility, while fixed rates provide stability. Research by Pan et al. (2007) shows that exchange rate and stock price volatility can vary based on the adopted system, affecting firms' risk management strategies.

Inflation

Inflation, as described by Salim (2019), refers to the overall rise in prices of products and services, often driven by rising expenses like wages and raw material costs, as well as heightened demand exceeding supply. High inflation can impact a company's dividend strategy by decreasing the purchasing power of money, which in turn affects costs and revenues (Basse and Reddemann 2011). Increased operating expenses can reduce gross profits, leading firms to retain more earnings for reinvestment rather than distribute dividends. During periods of low inflation, companies may pay higher dividends (Kauffman et al. 2016) due to fewer high-return investment opportunities Theissen et al. 2023). Ultimately, firms must consider both current and expected inflation rates when formulating their dividend policies to maintain shareholder confidence, as noted by Basse and Reddemann (2011).

Dividend policy

According to Samrotun (2015), dividend policy involves the trade-off between the dividend payout ratio to investors and retaining earnings for control over funds. While management may lower dividends to

retain more capital, investors often perceive high dividends as a sign of firm efficiency (Sutrisno 2009). The dividend signalling theory suggests that higher dividends indicate better company performance, influencing investor perception (Pamungkas et al. 2017; Jogiyanto 2003). Ultimately, dividend policy outlines the amount of the total earnings distributed versus reinvested (Brealey et al. 2014). Balancing a high dividend payout ratio with sufficient retained earnings for reinvestment is a key challenge for firms.

Empirical Review

Rinanda (2022) studied the impact of macroeconomic factors on the dividend policies of manufacturing companies listed on the Indonesian Stock Market (IDX) during the global health crisis. Focusing on food and beverage firms with reports from 2012 to 2016, the research used multiple linear regression through EVIEWS software. Surprisingly, changes in currency exchange rates, inflation rates, and interest rates did not significantly affect the firms' dividend policies. Also, Mbaka (2022) examined the influence of macroeconomic factors on dividend distribution among companies in Nairobi from 1987 to 2021, analysing the data with SPSS. The results showed money supply and exchange rates had a significant direct effect ($\beta = 0.310$ and $\beta = 0.317$, $p = 0.000 < 0.05$), but inflation had a positive yet insignificant effect ($\beta = 0.009$, $p = 0.501 > 0.05$).

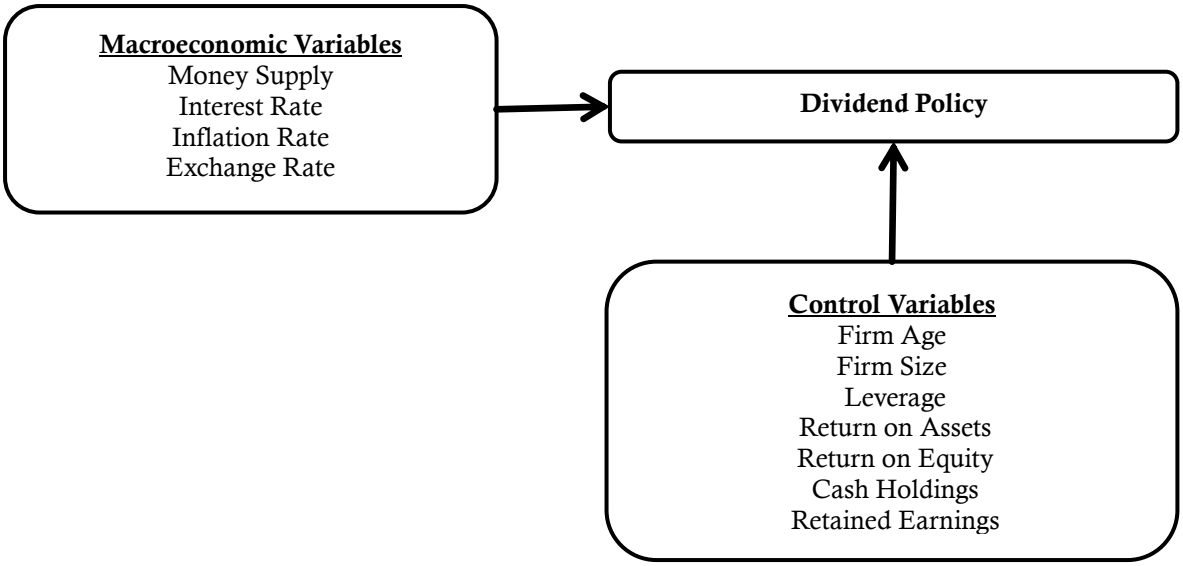
Khan et al. (2018) used annual data from 2001 to 2017 to analyse macroeconomic indicators and dividend payout ratio with OLS. They found that exchange rates positively correlated with the dividend payout ratio, while interest rates and inflation had a negative relationship. Tran et al. (2019) also studied money supply and dividend policies in Vietnamese non-financial companies between 2008 and 2017. Their findings indicated that money supply positively impacted dividend policies, especially during the global financial crisis.

Yakubu (2019) studied factors influencing the dividend policies of listed banks in Ghana from 2006 to 2015. The analysis revealed that domestic macroeconomic instability, indicated by inflation, had an insignificant direct impact on these policies. Basse and Reddemann (2011) analysed dividend policies in the U.S. Their results suggested a positive effect of inflation on dividends paid out. Romus et al. (2020) studied how macroeconomic factors, particularly GDP and the interest rate, influence dividend policies. They measured firm performance through ROA and analysed a sample of 10 out of 48 companies in real estate on the IDX. The study found that GDP growth positively affected firm performance and dividend policy, while the interest rate had no significant impact. Moreover, firm performance positively influenced dividend policy.

The empirical studies discussed in this paper give a general picture of the macro environment and dividend policies in various countries and at different periods. Rinanda (2022) noted that macroeconomic factors had a limited impact on Indonesian dividend policies, while Mbaka (2022) found a direct association between money supply, exchange rates, and dividend payments in Kenya. Khan et al. (2018) reported that exchange rates positively affected Pakistan's dividend policies, but interest and inflation rates had negative effects. Tran et al. (2019) similarly showed that money supply positively influenced dividend policies in Vietnam.

Conceptual Framework

Figure 1 shows the impact of macroeconomic factors on a firm's dividend policy. The dependent variable, dividend policy, is influenced by these macroeconomic variables. The study also accounts for various firm-specific factors, including size, age, profitability (measured by ROA and ROE), retained earnings, and cash reserves, as these elements also play a substantial part in shaping the company's dividend policy. (Rinanda 2022; Yakubu 2019; Marfo-Yiadom and Agyei 2011; Ghafoor et al. 2014; Tran et al. 2019)



Source: Authors' Compilation
Figure 1. Conceptual framework

RESEARCH METHODS

The study examined a sample of 10 financial and 13 non-financial companies listed in Ghana that provided annual statements from 2013 to 2022. A quantitative approach was employed to gather secondary data. Data on macroeconomic variables were obtained from the annual reports of the Bank of Ghana, while information regarding the dividend payout policy was obtained from the statements of the firms in focus.

The dependent variable was dividend policy. The independent variable, encompassing macroeconomic variables, was assessed through money supply, inflation, exchange rates, and interest rates. The analysis also controlled for firm-specific variables, including firm size and age, as well as leverage, profitability (measured by ROA and ROE), retained earnings, and cash holdings. A summary of the variables, their measurements, and empirical justifications is presented in Table 1.

Table 1. Measurement of variables

Variable	Measurement	Justification
Dividend Policy	Dividend payout ratio, calculated as dividends divided by earnings	Haider et al. (2012), Ajide and Aderemi (2014), and Marfo-Yiadom and Agyei (2011)
Money Supply	The average annual monetary base (M2+)	Nyamu (2016)
Interest Rate	Rate of government treasury notes	Issahaku et al. (2013)
Inflation Rate	Consumer price index (CPI)	Baba and Nasieku (2016) and Issahaku et al. (2013)
Exchange Rate	Exchange rate of the local currency per United States dollar	Willy (2012) and Issahaku et al. (2013)
Firm Size	Natural logarithm of a firm's total assets	Elamer and Benyazid (2018)
Firm Age	Number of years since the company's founding date	Nzekwe et al. (2021)
Return on Assets	Profit before interest and tax over average total assets.	Zyadat (2016); Jan et al. (2019); and Buallay (2019)
Return on Equity	Profit after tax over average shareholders' equity	Zyadat (2016); Jan et al. (2019); and Buallay (2019)
Leverage	Total liabilities to total assets	Sumaira and Amjad (2013)
Retained Earnings	Retained earnings to total assets	Tran et al. (2019)
Cash Holdings	Cash and cash equivalents to net total assets	Marfo-Yiadom and Agyei (2011) and Tran et al. (2019)

Source: Authors' Compilation

The study adopted a panel design because the data structure was of time series (years) and cross-sectional (firms). Based on this structure, the two-step system GMM by Blundell and Bond (1998) was used. The model used is as follows:

$$\text{Dividend Policy}_{it}=\beta_{0it}+B_1\text{Money Supply}_{it}+B_2\text{Interest Rate}_{it}+B_3\text{Exchange Rate}_{it}+ B_4\text{Inflation Rate}_{it}+B_5\text{Firm Age}_{it}+B_6\text{Firm Size}_{it}+B_7\text{Return on Assets}_{it}+B_8\text{Return on Equity }_{it}+ B_9\text{Leverage}_{it}+B_{10}\text{Retained Earnings}_{it}+B_{11}\text{Cash Holdings}_{it}+\varepsilon_{it} \quad (1)$$

Where:
β = Regression coefficient
i= each Firm
t= time dimension (years)
Ɛ = Error term

RESULTS AND DISCUSSION

The descriptive analysis of the data gives a general outlook of the major variables of interest (macroeconomic factors, dividend policy and firm-specific factors).

Table 2. Descriptive statistics

Variable	Obs.	Mean	Std. Dev (SD)	Min	Max
Dividend Payout Ratio	299	0.234	1.455	-20.29	13.166
Money Supply	299	4.716	0.338	4.136	5.256
Interest Rate	299	0.191	0.061	0.113	0.361
Inflation	299	0.151	0.117	0.079	0.541
Exchange Rate	299	0.323	0.183	0.117	0.679
Firm Size	299	5.907	1.092	2.762	8.396
Firm Age	299	46.565	24.427	6	126
Leverage	299	0.747	0.251	0.049	1.947
Return on Assets	299	0.056	0.115	-0.603	0.635
Return on Equity	299	1.032	17.317	-14.96	298.516
Cash Holdings	299	0.116	0.096	0	0.456
Retained Earnings	299	0.016	0.344	-1.572	0.821

Source: Authors' Compilation

Descriptive Statistics

The average of the dividend payout ratio variable is 0.234, which shows that, on average, firms remit a small proportion of their earnings as cash as dividends. The high standard deviation (SD) of 1.455 indicates a high volatility in the dividend behaviour of firms, with the highest payout being 13.166. The minimum value is negative (-20.29), which indicates that some firms paid dividends even in the years that they realised losses. Money supply showed an average of 4.716 with an SD of 0.338, ranging from 4.136 to 5.256. The interest rate averages 19.1% with a standard deviation of 0.061, ranging between 11.3% and 36.1%. The inflation rate has a mean of 15.1%, which indicates a moderately inflationary environment with a standard deviation of 0.117, ranging between 7.9% and 54.1%. The exchange rate variable showed an average of 0.323 and an SD of 0.183, which ranges from 0.117 to 0.679.

Regarding the analysis of the firm size, the mean value is 5.907 with an SD of 1.092. The mean firm age is 46.565 years, meaning that most of the firms in the sample are established firms and have been in operation for a long time. The SD of 24.427 demonstrates a high variation in the ages of firms, from the youngest being 6 years to the oldest being 126 years. The leverage variable has a mean of 0.747 with an SD of 0.251, implying some variation in the level of debt, although the leverage ratio varies between 0.049 and 1.947.

The mean for the ROA is 5.6% with an SD of 0.115, ranging between -0.603 and 0.635. The ROE showed an average of 1.032 and an SD as high as 17.317, ranging between -14.96 and 298.516. Cash holdings has a mean of 11.6% of total assets with an SD of 0.096. Lastly, retained earnings have a mean of 0.016 and a standard deviation of 0.344, ranging from -1.572 to 0.821.

Correlation Analysis

The correlation investigates the strength and direction of relationships between dividend payout ratio and various macroeconomic and firm-specific variables while ensuring there are no multicollinearity issues. The correlation between the dividend payout ratio and money supply is a weak negative at -0.049. The relationship with interest rates is slightly positive at 0.056, while inflation has a modestly stronger positive correlation at 0.087. The exchange rate shows a weak positive correlation of 0.064. For firm-specific variables, firm size shows a negligible correlation with a dividend payout ratio of 0.004 and firm age at 0.021. Leverage has a low negative correlation of -0.040, while ROA has a weak positive correlation of 0.044. Interestingly, ROE shows a near-zero negative relationship at -0.007. Cash holdings correlate positively with the dividend payout ratio at 0.073, and retained earnings show a low positive correlation of 0.100.

Among macroeconomic variables, money supply has a strong inverse correlation with the exchange rate at -0.949. The relationship between interest rates and inflation is high at 0.874, indicating that rising inflation tends to lead to higher interest rates, supporting central bank policies. Money supply and inflation correlate positively at 0.472. In firm-specific variables, leverage shows a significant negative correlation with ROA at -0.521, while retained earnings and leverage have a negative correlation of -0.699. Conversely, retained earnings and ROA correlate positively at 0.569, implying profitable firms can retain more earnings for growth or dividends. The pairwise correlation matrix reveals that no correlation coefficients among the independent variables exceed 0.90 (except for money supply and exchange rate), demonstrating that multicollinearity is not an issue in this analysis. Also, the study separates the macroeconomic variables in different models to help mitigate multicollinearity issues.

Table 3. Pairwise correlations

Variables	Dividend Payout Ratio	Money Supply	Interest Rate	Inflation	Exchange Rate	Firm Size	Firm Age	Leverage	Return on Assets	Return on Equity	Cash Holdings	Retained Earnings
Dividend Payout Ratio	1.000											
Money Supply	-0.049	1.000										
Interest Rate	0.056	0.444	1.000									
Inflation	0.087	0.472	0.874	1.000								
Exchange Rate	0.064	-0.949	-0.451	-0.398	1.000							
Firm Size	0.004	0.245	0.111	0.120	-0.235	1.000						
Firm Age	0.021	0.153	0.064	0.070	-0.143	-0.041	1.000					
Leverage	-0.040	0.147	0.105	0.111	-0.133	0.157	-0.121	1.000				
Return on Assets	0.044	-0.142	-0.065	-0.052	0.162	-0.085	0.174	-0.521	1.000			
Return on Equity	-0.007	-0.019	0.024	0.001	-0.011	-0.007	-0.026	0.071	-0.025	1.000		
Cash Holdings	0.073	0.139	0.092	0.083	-0.135	0.284	0.150	-0.039	0.172	-0.051	1.000	
Retained Earnings	0.100	-0.165	-0.094	-0.109	0.152	-0.058	0.265	-0.699	0.569	-0.066	0.277	1.000

Source: Authors' Compilation

Regression Results

The GMM analysis covers four different models, and each model includes different macroeconomic variables to explain their impact on dividend payout, controlling for firm characteristics. The following observations can be made.

Table 4. Dynamic panel-data estimation, two-step difference GMM

VARIABLES	(1) Dividend Payout Ratio	(2) Dividend Payout Ratio	(3) Dividend Payout Ratio	(4) Dividend Payout Ratio
L.Dividend Payout Ratio	-0.420***	-0.508***	-0.557***	-0.421***
	(0.0484)	(0.0546)	(0.0574)	(0.0277)
Money Supply	39.84***			
	(13.33)			
Interest Rate		7.612**		
		(3.254)		
Inflation			4.168**	
			(1.911)	
Exchange Rate				-15.61***
				(3.389)
Control Variables				
Firm Size	19.08*	32.92***	29.91***	10.87**
	(10.09)	(11.25)	(9.100)	(5.270)
Firm Age	-4.805***	-2.261***	-2.030***	-0.997***
	(1.547)	(0.513)	(0.350)	(0.363)
Leverage	17.79	18.75	16.07	36.10***
	(13.65)	(17.78)	(18.84)	(11.37)
Return on Assets	-22.62***	-36.04***	-37.64***	-9.294*
	(8.657)	(8.650)	(7.945)	(4.899)
Return on Equity	-0.00667	-0.00717	-0.00562	-0.0100**
	(0.00499)	(0.00777)	(0.00789)	(0.00396)
Retained Earnings	49.48***	68.67***	61.57***	61.56***
	(18.22)	(20.56)	(20.26)	(13.39)
Cash Holdings	-0.385	-19.56	-26.78*	-11.53***
	(7.472)	(13.88)	(15.31)	(4.251)
Diagnostics				
Wald chi2	9043.54	960.96	949.24	2706.04
Prob > chi2	0.000	0.000	0.000	0.000
AR(1) z	-0.97	-0.84	-0.86	-1.14
AR(1) Pr > z	0.331	0.399	0.387	0.254
AR(2) z	1.45	1.58	1.42	1.17
AR(2) Pr > z	0.146	0.114	0.156	0.242
Sargan chi2	0.88	0.52	0.57	2.24
Sargan Prob > chi2	0.990	0.998	0.997	0.896
Hansen test of overid chi2	7.15	5.24	5.03	6.87
Hansen test of overid Prob > chi2	0.307	0.514	0.539	0.333
Hansen test excluding group chi2	2.05	2.32	2.22	1.76
Hansen test excluding group Prob > chi2	0.358	0.313	0.329	0.415
Instruments	15	15	15	15
Observations	253	253	253	253
Number of Firms	23	23	23	23

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Authors' Compilation

In the analysis of the four models, the lagged dividend payout ratio variable (L. Dividend Payout Ratio) shows a significant negative coefficient, ranging from -0.420 to -0.557. This indicates that firms with higher past dividend payout ratios tend to reduce current payouts, confirming at the 1% significance level ($p < 0.01$) that past behaviour influences current dividend policies. In Model 1, the coefficient for money supply is positive (39.84, $p < 0.01$), suggesting that increased liquidity leads to higher dividends. Model 2 shows a

positive and significant coefficient for interest rates (7.612, $p < 0.05$), indicating that rising interest rates compel firms to offer higher dividends to attract investors. Model 3 reveals a positive and significant coefficient for inflation (4.168, $p < 0.05$), suggesting that firms may increase dividends to counteract inflation's impact on purchasing power. Model 4 displays a negative coefficient for the exchange rate (-15.61, $p < 0.01$), indicating that currency depreciation leads to a reduced dividend payout ratio.

Firm size has a consistently positive effect on dividends across all models, with coefficients ranging from 10.87 to 32.92, while younger firms show a negative correlation with dividends. Leverage is positively linked to dividend policy but is significant only in Model 4 (36.10, $p < 0.01$). ROA inversely affects dividends (coefficients from -9.294 to -37.64), suggesting firms retain profits for reinvestment. ROE has a significant negative coefficient in Model 4 (-0.0100, $p < 0.05$), indicating that higher returns lead to profit retention. Retained earnings positively impact the dividend payout ratio across all models (49.48 to 68.67), suggesting firms with ample retained earnings can pay dividends. Lastly, the relationship between cash holdings and dividends is negative and significant only in Model 4 (-11.53, $p < 0.01$), indicating firms favour retaining cash for operations rather than distributing it.

Model Diagnostics

The study results using two-step difference GMM for dynamic panel data are presented, focusing on model diagnostics to assess credibility and soundness. Key diagnostics include Wald Chi-square statistics, autocorrelation tests, and over-identification tests. The Wald Chi-square statistic indicates a good model fit with p-values ($p < 0.001$), suggesting that the variables effectively account for variations in the dividend payout ratio. The AR(1) and AR(2) tests reveal no significant autocorrelation, reinforcing the model's validity. Moreover, Sargan and Hansen's p-values greater than 0.05 indicate the instruments used are valid.

Discussion of results

Effect of the money supply on dividend policy (Model 1)

The positive and highly significant association between money supply and dividend payout ratio (coefficient: 39.84, $p<0.01$) observed in this study aligns with the studies done by Tran et al. (2019) and Mbaka (2022). A study by Tran et al. (2019) on Vietnamese firms also confirmed our findings. Likewise, Mbaka's (2022) analysis of companies in Nairobi established that money supply has a direct and significant impact on the dividend payout ratio ($\beta = 0.310$, $p<0.000$). Taken together, these papers imply that expansion in money supply results in higher dividend payments, perhaps because of enhanced liquidity in the economy.

Effect of interest rates on dividend policy (Model 2)

The positive and significant effect of interest rates on the dividend payout ratio (7.612, $p<0.05$) is somewhat different from some of the previous studies. Khan et al. (2018), in their study on Pakistani textile firms, also revealed that interest rates have a negative, insignificant impact. In the same way, Romus et al. (2020) also stated that the interest rate had no significant impact, and Rinanda (2022) also found the same thing. Contrary to these findings, our results indicate that in the Ghanaian context, higher interest rates may increase the dividend payout ratio, possibly as a way of attracting investors. This could be due to differences in economic environments, as those previous studies were done in Asia.

Effect of inflation on dividend policy (Model 3)

The positive and significant relationship between inflation and dividend payout ratio (4.168, $p<0.05$) observed in this study corresponds to some of the previous studies but not others. In their study of the US firms, Basse and Reddemann (2011) noted that inflation has a positive impact, which is consistent with this study. However, our findings are different from Yakubu (2019), who established that while inflation has a positive impact on the dividend policies of the listed banks in Ghana, the impact is insignificant. In the same regard, Mbaka (2022) found a positive but insignificant correlation between inflation and dividend payout ratio in firms in Nairobi (Kenya). It is rather surprising that our results differ from Yakubu's (2019), given that both works examine Ghana, indicating that the connection between inflation and dividend policy may be contingent on the sector or period under consideration. Our use of GMM estimation instead of Yakubu's pooled OLS and fixed/random effects models could also explain the differences in the results. Furthermore, Yakubu only focused on banks from the year 2006 to 2015.

Effect of exchange rate on dividend policy (Model 4)

The negative and highly significant effect of the exchange rate on the dividend payout ratio (-15.61, $p<0.01$) is in contrast to some of the earlier studies. Mbaka (2022) established a positive and significant correlation between exchange rates and dividend payout ratio ($\beta = 0.317$, $p<0.000$) for companies in Nairobi (Kenya). In the same regard, Khan et al. (2018) found a significant and positive correlation between exchange rates and the dividend payout ratio in the Pakistani textile industry. Contrary to these findings,

our results indicate that in the context of Ghana, currency depreciation results in lower dividend payments. This also differs from the findings of Rinanda (2022), whereby currency exchange rates have an insignificant impact on the dividend policies of Indonesian manufacturing firms during the global health crisis.

CONCLUSIONS, RECOMMENDATIONS, AND IMPLICATIONS

The purpose of this study was to investigate how macroeconomic variables affect the dividend policies of firms in Ghana. The findings indicate that these factors significantly influence the dividend payout ratio; specifically, money supply, interest rates, and inflation are positively related to dividend payments, while exchange rates have a negative impact. The positive correlation between money supply and dividends suggests that increased liquidity can enhance dividend distributions, indicating that monetary policy expansions may benefit shareholders. Conversely, higher interest rates appear to encourage firms to raise dividends to attract investors, countering the returns on fixed-income assets. Additionally, firms may use dividends as a hedge against inflation, thereby maintaining the purchasing power of shareholders to cover the shareholders' purchasing power erosion to maintain the value of cash dividends. In contrast, currency depreciation reduces profits and limits cash available for dividends, prompting stricter dividend policies. This is particularly relevant for multinational corporations and foreign investors evaluating opportunities in Ghana amid exchange rate fluctuations.

We recommend that corporate managers consider these macroeconomic factors when devising dividend policies and that investors factor them into their assessments of firms' dividend capacity. This research adds to the existing works on dividend policy in Africa. The study's limitation is its concentration solely on Ghanaian firms, which may affect the generalisability of the results. Further studies could compare these findings with those from other regions. Also, future research could explore how macroeconomic factors interact with firm characteristics and corporate governance systems to influence dividend strategies.

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