

# Macro-Economic Factors and Dividend Policy of Non-Financial Quoted Companies in Nigeria

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## Abstract

Nigeria as a country witnessed serious economic melt-down from the year 2008 which invariably affected the dividend payment ability of the firms since they operate within the macro-economic environment. Hence, this study examined the influence of macro-economic factors on dividend payout of companies in Nigeria. Secondary data was employed for the study. A sample of 50 non-financial listed firms out of the population of 109 non-financial quoted firms were selected using purposive sampling technique. Data on macro-economic factors such as gross domestic product, consumer price index, exchange rate, interest rate and unemployment rate were obtained from the Central Bank of Nigeria's statistical bulletin. The annual reports of the chosen companies for the years 2012 to 2019 were the source of the data on the dividend payout ratio. Ordinary least square and the generalized method of moments were used to analyse data. The results revealed that whereas other variables have a negative impact on dividend policy, macroeconomic factors like GDP and exchange rates have a significant positive impact. Based on this finding, the study concluded that all the macro-economic variables considered in this study are essential when it comes to the decision of Nigerian quoted firms about dividend payout.

**Keywords:** Dividend, Macro-economic factors, Policy, Quoted Companies, Nigeria

**JEL Classifications:** G30, M21, P34

## 1. Introduction

Over decades, dividend policy of non-financial quoted companies has become an important discourse in the field of financial literature and providing evidence that dividend decision of non-financial quoted companies in Nigeria is affected by various factors. In actual fact, the attention of many scholars such as (Abdulkadir, Abudullah and Wong, 2016; Nuredin, 2012; Yusuf, 2019) has been drawn to the concepts of dividend policy and various attempts have been made to provide antidote to several issues pertaining to corporate dividend behaviour. Sequel to this, dividend decision has become pertinent apprehension for any entity because investors are expected to get return on their investments to serve as rewards for the risk taken for committing their financial resources to the business operations of the entity (Yusuf, 2019). However, many investors in Nigeria over the years have accused the quoted companies of not consistent in the payment of dividend. Based on the data provided by Nigerian Stock Exchange as at March 29, 2017 and as posited in the study of Olusola (2018), dividend payment has not been made to the shareholders for more than five years

by eighty four firms quoted on the NSE and this represents 74% of all the companies totaled one hundred and thirteen (113) published on the daily official list. Those companies who failed to pay dividends to their shareholders are dispersed throughout the Nigeria Stock Exchange's several sectors, with some of them having not paid dividends in more than ten years (Olusola, 2018). Under the Agricultural and Conglomerate sub-sectors, FTN Cocoa listed and John Holts Plc paid dividend last in 2010 and 2005 respectively while First Aluminium, DN Meyer Plc, Portland Paints and Africa and Premier Paints Plc under the Chemical and Paints Sub-sector declared dividend last in 2006, 2008, 2011 and 2001 respectively. AG Leventis, SCOA, Arbico, ROADS, UAC Properties, Skye Shelter, Union Homes, and UPDC Real Estate paid dividends last in the Construction/Real Estate sub-sector in 2016, 2015, 1996, 2014, 2013, 2014, 2015, 2013, 2014, and 2014, respectively (Olusola, 2018).

In the study of Abdulkabir, Abdullah and Wong (2016) as quoted from Proshare News, there have been inconsistency in the payment of dividends to

the extent that some firms listed on the Nigeria Stock Exchange has consistently failed to give returns to their shareholders during the last half decade. In a similar work, Sawitri and Sulistyowati (2018) revealed that dividends paid over the years by several firms have been unstable and fluctuating. Hence, this unwelcomed trend in dividend payments called for critical analysis.

Extant literatures have reported different factors as influencing dividend payout without a consensus on the main factors that drive dividend policy (Yusuf, 2019). Some studies (Bostanci, Kadioglu and Sayilgan, 2018; Jabbouri, 2016; Malik, Gul, Khan, Rehman and Khan, 2013; Yusof and Ismail, 2016; Yusuf, 2019) identified significant positive association between liquidity and dividend decision while Aqel (2016) showed the existence of negative relationship, others (Lestari, Febrian, Nidar and Sudarsono, 2019; Pinto and Rastogi, 2019) revealed absence of significant relationship between the two variables.

Also, various viewpoints have also been stated on the association of size and dividend payout policy. Studies such as (Al-Najjar and Kilincarslan, 2017; Bostanci, Kadioglu, Sayilgan, 2018; Jaara, Alashhab and Jaara, 2018; Jabbouri, 2016; Pinto and Rastogi, 2019; Ullah, Bagh and Arif, 2019; Yusof and Ismail, 2016; Yusuf, 2019) revealed that dividend policy is positively influenced by size while some research works Lestari, Febrian, Nidar and Sudasono (2019) reported negative association and others Aqel (2016) showed no association. Furthermore, divergent views were discovered as regards the association between profitability and dividend payout. The discovery of significant direct link was found between the variables by researchers such as (Al-Najjar and Kilincarslan, 2017; Aqel, 2016; Bostanci, Kadioglu, Sayilgan, 2018; Jaara, Alashhab and Jaara, 2018; Jabbouri, 2016; Pinto and Rastogi, 2019; Ullah, Bagh and Arif, 2019; Yusuf, 2019) while others (Lestari, Febrian, Nidar and Sudarsono, 2019) revealed a negative relationship.

More so, a lot of studies (Pinto and Rastogi, 2019; Ullah, Bagh and Arif, 2019; Yusof and Ismail, 2016; Yusuf, 2019) especially in Nigeria concentrated more on industry-specific factors as drivers of dividend payout policy with less emphasis on the impact of macro-economic factors on dividend plan. Consequently, the goal of this study is to

examine the influence of macro-economic factors on dividend policy of non-financial quoted companies in Nigeria from 2012 to 2019.

This article contributes to extant literatures by introducing macro-economic factors in the determination of dividend policy among companies Nigeria. This is of utmost important because companies operate as open systems which influence the environment and also being influenced by the environment because their business activities are carried out within the macro-economic sphere in which they have little or no prerogative power over (Olayiwola & Ajide, 2020).

## **2. Literature Review**

### **Theoretical Review**

In the extant literatures, there have been different views on the factors which influence dividend policy of an organisation. In order to put this occurrence in its proper perspective, many theorists have propounded several theories. These theories include: Signalling Theory, Dividend Irrelevance Theory, Residual Theory and Agency Theory.

Signalling Theory is about two-party relationship in which some responsibilities (in form of information gathering) are discharged by a party known as the agent on behalf of another party known as the principal. This theory has been embraced in many fields of life because of its intuitive nature despite its fundamental idea which is to observe knowledge gaps between organisations and prospective employees.

According to Jacob and Taslim (2017), the fundamental argument of this theory is that opportunity to similar capital information is not on the same pedestal between the manager and shareholder. This is known as information asymmetry. On several occasions, the managers of a company may be privy to some pieces of information in which the shareholders will be ignorant of such information. Furthermore, managers are more likely than outside investors to have more accurate knowledge about the future performance of the company. However, the keen observation of the company's operations can give signal to the shareholders about the state of things pertaining to the company.

Also, through dividend policy, the information opportunity that the managers have which

outsiders do not have can be passed across to the shareholders. There are several studies that supported the ideas of this signalling theory of dividend policy. McCluskey, Burton, Power and Sinclair (2006), Bozos, Nikolopoulos and Ramgandhi (2011), Al-Yahyaee, Pham and Walter (2011), Brav, Harvey and Michaely (2005) and Allen, Bernardo and Welch (2000) all tends towards claiming that organisations with great value usually reward their shareholders in form of cash dividend so as to encourage other investors who have access to better information. Contrarily, dividend payments become rare activities by organisations with shallow value so as to protect the image of the organisations.

According to Miller and Modigliani's (1961) theory of dividend irrelevance, a company's approach to its dividend decision has no bearing on the value of the company. The theory is of the opinion that a firm can decide on what to do with its earnings in a given time either by investing in a positive NPV project with the earnings or decide to reward the investors through cash dividend with the earnings and raised the funds needed for the investment from the stock market through issues of shares. This implies that the decision to disburse dividends by a company and have access to new shares will cause the value of present shares to deteriorate by the cash dividend paid but the total market value of the shares of the company will remain the same because the loss in the market value of the shares will be compensated by the new shares raised in the stock market.

As stated by Ebrahim and Rabab (2017), MM's dividend-irrelevance theory indicates that the stock's return of investors from their investment can be influenced by their action notwithstanding the dividend of the stock. They contend that investors can create "homemade" dividends by adjusting their portfolios in a way that satisfies their tastes, such that whatever dividend policies are implemented by corporations, they are all treated equally by investors. Because the worth of shareholders' wealth is purely based on the returns they receive from their investments, without taking into account the distribution of those returns, they would not care about dividends or capital gains.

Agency theory is concerned with the investigation of the kind of association that is in existence

between the principal and the agent. Jensen and Meckling (1976) as cited in Denise (2001) were progenitors of this theory where a company is seen as a "nexus of contracts between different stakeholders of the organization". This relationship that subsists gives room for specialisation and benefits the organisation. The agents who benefit from the part of the labour of their hands are always employed because of the value they could add to the organisation as a result of their special skills (Denise & McConnell, 2003). In other words, Olang, Akenga, and Mwangi (2015) cited Ross, Westerfield, and Jordan's (2011) Agency theory, which stated that paying big dividends can aid to resolve the ongoing conflict of interest that frequently arises between shareholders and managers. According to the authors, during the period of low retention, the managers of the company will have to source for funds to finance the viable investments through the stock market by issuing shares to the public for subscription. With this, the financiers' stakeholders will get to know the decision made as regards finance by the management through issues of the new shares. Therefore, the manager will engage in those activities which will maximise the wealth of the shareholders by making full disclosures of all activities. This is because they know the firms will be exposed to external party through external borrowing.

After reviewing all the above theories, this study was anchored on Agency theory. In contrast to other theories, this theory addressed the conflict of interest that typically arises when an organization's management and investors receive dividend payments. La Porta, Lopez-de-Silanes, Shleifer and Vishny (2000) confirmed the link between agency theory and dividend policy. This study affirmed that a potent tool to alleviate the conflict between internal and external parties. It was revealed that higher dividend payments are made by firms operating in countries where investors' protection is given utmost priority than firms in countries where investor protection is at shallow level.

Also, agency costs theory connotes that increasing dividends is one way of decreasing the agency costs. By paying more dividends the level of reserves and surplus will reduce and firms have to search for fund from external financing (Priya &

Mohanasundari, 2016). In the same vein, dividend policy and performance are closely related to the problem of conflict between shareholders and managers as regards the distribution of earnings of the entity. This fracas occurs due to the fact that cost of agency is being borne by the company and it is mostly common in large organisations where there is separation between the management and ownership. In this kind of organisation, the managements have major control of the organisation and access to better information while the co-owners have shallow control and less access to information (Szymanska, 2017). All these measures to ensure mutual relationship between the management and the shareholders are not sufficient or lacking in other theories reviewed.

#### **Empirical Review**

Several evidences have shown that there are factors which have implication on dividend policy of quoted companies but with different views from different scholars. Malik, Gul, Khan, Rehman and Khan (2013) examined the variables which influence the policy of firms to declare dividend. The companies considered were those quoted on Karachi stock Exchange between 2007 and 2009. These data were collected based on the suitability of the models formulated in the study. The findings indicated that liquidity has a tendency to increase probability of companies to pay dividends.

Likewise, Nnadi, Wogboroma and Kabel (2013) investigated twenty-nine stock exchanges in Africa to determine the factors which could influence dividend policy. The study sampled 1,742 firms which are listed in the stock markets of the sampled countries from different sectors. It was concluded in the study that agency cost is the most influential factor of dividend payment. However, this conclusion may not be realistic at all times because there are several other factors such as macro-economic factors, stock liquidity etc. which influenced dividend policy. In another dimension, Wanjiru (2013) evaluated the existence of association between dividend payout decision of listed on Nairobi Securities Exchange (NSE) and some selected macro-economic factors. The NSE and Central bank of Kenya were the sources from which the secondary data used by the study gotten from. The findings of the study implied that the determination of dividend policy is highly

dependent on these selected macro-economic variables as a significant relationship exists between inflation rate and dividend payout decision. On the other hand, interest rate and money supply have a little positive effect while exchange rate has an inverse relationship with dividend policy.

In the study of Jabbouri (2016) an attempt was made to recognize the major influential factors of dividend policy in MENA emerging markets during the periods 2004 to 2013. The outcomes of the study revealed that size, current profit and liquidity have positive relationship with dividend policy while leverage, growth, free cash flow and state of the economy have an inverse association with dividend policy.

More so, the scholarly work of Yusof and Ismail (2016) identified earnings, debt, size, investment and largest shareholder as having significant influence on dividend policy of publicly listed firms in Malaysia. Aquel (2016) investigated how dividend policy is being affected by six determinants such as firm's size, profitability, risk, leverage, liquidity and growth opportunities. The study considered 24 traded firms listed on the Palestine Securities Exchange between 2009 and 2013. The result shows that growth, risk, and profitability have positive and significant association with dividends payout ratio while firm size and leverage ratio have no significant relationship with dividend policy.

Al-Najjar and Kilincarslan (2017) determined the effect of several factors such as regulations, reforms and legal environment on dividend policy of 264 quoted companies on Istanbul Stock Exchange in Turkey for the periods of ten years from 2003-2012. The findings revealed that profitability, firm age and size are more likely to propel firms to pay dividend whereas less dividend payment may be the feature of firms with higher investment opportunities and more debt. Bostanci, Kadioglu, and Sayilgan (2018) carried out a survey on the implication of company's return on equity, market value/book value ratio, liquidity and the company's size on dividend payout. 106 Companies listed on the Borsa Istanbul stock exchange during the period 2009 to 2015 were considered in the study. It was shown that the industrial specific

factors analysed in the study have positive association with dividend payout.

Jaara, Alashhab and Jaara (2018) examined the determinants of dividend policy with the selection of sampled non-financial companies in Jordan over the period 2005–2016 using panel dataset. The study concluded that company size and return on equity showed significant positive relationship with dividend policy while risk has a negative impact on the payout levels. Also, Khan, Ullah, Ali and Khan (2018) investigated the presence of nexus between dividend payout policy and macro-economic factors. The focus of the study was on the Pakistan listed companies which fall under the textile sector from 2001 to 2017. It was discovered through the data analysis using OLS that direct association exists between macro-economic variables such as exchange rate, unemployment and dividend payout ratio while an inverse relationship was found between interest rate, inflation rate, GDP growth rate and dividend payout.

Ullah, Bagh and Arif (2019) evaluated several factors which may have effect on dividend decision of firms. Twenty non-financial quoted firms in Pakistan which fall under the food sector were considered for the period of 2011 to 2016. The result of the study showed a mixed discoveries as some of the factors (profitability, liquidity and leverage) are positively and significantly related while some factors (business risk and growth opportunity) are negatively and significantly related to dividend decision.

Pinto and Rastogi (2019) discovered size, profitability and interest coverage ratios as having significant positive relationship with dividend policy while business risk and debt have a significant inverse relationship with dividends. The study was conducted in India covering the periods of twelve years from 2006 to 2017. In the same vein, Profitability, firm size and leverage were discovered to have a significant negative effect while liquidity and investment opportunity have no effect on dividend policy of companies in Indonesia (Lestari, Febrian, Nidar, & Sudarsono, 2019).

In the study of Yusuf (2019) which was targeted at the emerging markets in Africa with emphasis on the dividend decision of two hundred and ninety-nine listed companies in Nigeria, it was revealed that liquidity and growth opportunity were the

determinants of dividend decision in the three periods being considered. The research work considered dividend decisions of these companies during the periods of pre-crisis, crisis and post-crisis with the analysis of six possible determinants of dividend policy. Correlation and multiple regression analysis were employed covering the period of 13 years (2002 to 2014).

Likewise, free cash flow, growth, liquidity, profitability and size were seen as major determinants of dividend payment from analysis of unbalanced panel data gathered from 799 observations of companies from different countries for the periods of fourteen years. These factors are identified as crucial for determining dividend policies (Justyna, Magdalena & Magdalena, 2020). Empirical study carried out in Pakistan with the Pharmaceutical companies in focus also proved the significant effect of firm size, free cash flow coupled with managerial ownership, debt policy and ROA on dividend policy (Gul, Ullah, Gul & Rasheed, 2020). Also, Lotto (2020) carried out a study on the influence of both internal and external factors on dividend payout policy of non-financial firms in Tanzania for the periods of 2008 to 2017. Profitability, growth, size, leverage, liquidity and lagged dividend payout were considered as the industry specific factors while inflation and GDP were considered as the macro-economic factors. Panel analytical design was used and the findings indicated that all the factors both industry specific and macro-economic except leverage and GDP have positive relationship with dividend payout of non-financial firms.

Romus, Anita, Abdillah and Zakaria (2020) evaluated the impact of macro-economic variables on dividend policy of ten Property and Real Estate Companies out of the 48 companies listed on Indonesian Stock Exchange using multiple linear regression. It was evident from the findings of the study that dividend payout decision is significantly and positively influenced by GDP growth rate while dividend policy is not significantly influenced by interest rate. Olayiwola and Ajide (2020) the only recent study in Nigeria that examines the implication of macro-economic variable such as oil price, institution quality, and firm-specific drivers on dividend policy discovered the existence of great association among the selected variables and

dividend decision. The study which made use of System-GMM analysis summarily concluded that a great consideration should be given to macro-economic factors whenever decision is to be made as regards dividend payment. Although, this study examined the effect of macro-economic factors on dividend payout extensively but other factor such as stock liquidity was not considered.

The above empirical evidences show that there is a growing literature on the factors which drive dividend policy but with diverse conclusion. It is crystal clear that researchers' views about some of the firm-specific factors remain controversial. Also, the research area on the implication of macro-economic variables on dividend payout policy is rarely explored in the extant literature especially in Nigeria. Hence, the study examined the impact of macro-economic variables such as GDP, consumer price index, exchange rate, interest rate and

unemployment rate, on dividend decision policy.

during the sample periods and for whom relevant data were easily accessible. This study made use of secondary data collected from the Central Bank of Nigeria's Statistical Bulletin and the audited annual reports and accounts of Nigeria's non-financial quoted companies covering the periods of 2012 to 2019. The estimation techniques employed were pooled OLS, the fixed effect method as a result of the Hausman test and the Generalised Method of Moments (GMM).

**Model Specification**

The macro-economic factors considered were Gross Domestic Product, Consumer Price Index, Exchange Rate, Interest Rate and Unemployment Rate while dividend payment was measured by dividend payment ratio.

A linear equation that relates macro-economic factors to dividend payment is specified as follows:

$$InDPR_{it} = \beta_0 + \beta_1 InGDP_{it} + \beta_2 InCPI_{it} + \beta_3 InEXR_{it} + \beta_4 InINT_{it} + \beta_5 InUEM_{it} + \varepsilon_{it} \dots (1)$$

	SYMBOL	MEASUREMENTS	SOURCES
<b>Dividend Payment Ratio</b>	DPR	Dividend paid for a share in year t divided by earnings per share	Audited Annual Reports
<b>Gross Domestic Product</b>	GDP	Value of GDP from 2012-2019	CBN Statistical Bulletin
<b>Consumers' Price Index</b>	CPI	Consumer price index from 2012-2019	CBN Statistical Bulletin
<b>Exchange Rate</b>	EXR	Exchange rate from 2012-2019	CBN Statistical Bulletin
<b>Interest Rate</b>	INT	Interest rate from 2012-2019	CBN Statistical Bulletin
<b>Unemployment Rate</b>	UEM	Unemployed/total labour force multiplied by 100	CBN Bulletin

**3. Methodology**

**Population, Sample size and Sampling Technique**

This study considered all non-financial quoted companies in Nigeria as released by the NSE in January 2021 totaled one hundred and nine (109) as the population of the study. The reasons for choosing these quoted companies is that they have their accounts mandatorily submitted to the Nigerian Stock Exchange and they audit their accounts which follow the regulatory bodies which makes their annual reports more reliable and dependable. Purposive sampling technique was used in the study to choose 50 companies whose stocks were actively traded

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Where:

$GDP_{it}$  = Gross Domestic Product

$CPI_{it}$  = Consumer Price Index

$EXR_{it}$  = Exchange Rate

$INT_{it}$  = Interest Rate

$UEM_{it}$  = Unemployment Rate

$\beta_0$  is the constant term,  $\beta_1, \dots, \beta_5$  are the coefficient or parameters of the regression to be estimated and  $\varepsilon_{it}$  is the stochastic error term. The a priori expectation:  $\beta_1, \dots, \beta_5 > 0$ .

**4. Results And Discussion**

The estimation techniques employed in this study were pooled OLS, the fixed effect or random effect depending on the result of the Hausman test and the General Method of Moment (GMM). Prior to this, the descriptive statistics, correlation analysis

0.2737 and median of 222.1050. This mean that changes in EXR is minimal during the periods of the study.

The average GDP within the sample period was 109930.7 and median of 97817.23, while mean and median of INT were 0.0842 and 0.0658 respectively.

**Table 2: Descriptive Statistics**

	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Prob.	Obs.
DPR	0.87121	0.71250	14.87945	0.00000	1.68711	19.0632	401.719	3.14896	0.0000	384
CPI	183.7125	171.4000	267.5000	124.4000	48.90155	0.430363	1.774081	37.39541	0.0000	400
EXR	248.8100	222.1050	364.4900	157.4400	88.21390	0.273759	1.298952	53.22235	0.0000	400
GDP	109930.7	97817.23	163335.3	71713.94	31238.41	0.466697	1.733024	41.27422	0.0000	400
INT	0.084238	0.065850	0.136000	0.057900	0.029048	0.668038	1.726346	56.78819	0.0000	400
UEM	0.060125	0.058100	0.083900	0.037000	0.019896	0.041990	1.161513	56.45144	0.0000	400

and unit root test were obtained. Descriptive statistics are presented in Table 2, correlation analysis is presented in Table 3, the panel unit root is captured in Table 4, and the estimated model is presented in Table 5.

**Descriptive Statistics**

The descriptive statistics on the variables were presented in Table 2. The variables comprise DPRit (dividend payout ratio), (macro-economic factors) Gross Domestic Product, Consumer Price Index, Exchange Rate, Interest Rate and Unemployment Rate. DPR is negatively skewed with mean of 0.87

It indicates that both variables have a low degree of dispersion due to the little gap between their means and medians. UEM with mean of 6.01% and median value of 5.8%. The maximum value of UEM stood at 8.39% with minimum value of 3.7%. The implication of this is that the dispersion in UEM is at minimal in the study periods.

The normality condition of the variables is reported by Jarquebera statistics. It evaluates whether or not the variables have a normal distribution. The p-value of a variable's Jarque-Bera statistic must be higher than 0.05 in order for it to be considered regularly distributed. All of the variables showed p-values less than 0.05, as shown in Table 2, indicating that they are not all normally distributed. Given that the variables were panel in nature and a blend of several cross-sectional data, this is not surprising (firms). In light of this outcome, the model's estimation was carried out while taking the dataset's properties into account. The study assumed the assumption of either fixed or random effect.

**Source:** Authors' Computation (2022)

Correlation Analysis						
	CPI	DPR	EXR	GDP	INT	UEM
CPI	1.0000					
DPR	-0.0055	1.0000				
EXR	0.2722	-0.0084	1.0000			
GDP	0.2915	0.0092	0.2694	1.0000		
INT	-0.1548	0.0373	-0.1581	0.3291	1.0000	
UEM	0.3249	-0.0354	0.1669	0.1119	-0.2997	1.0000

**Table 3: Correlation Matrix.**

and median value of 0.71250. The DPR reported a skewness value of 19.063. This is an indication that the fluctuation in DPR is extremely high. EXR reported mean of 248.81 with positive skewness of

**Source:** Authors' Computation (2022)

**Correlation Matrix**

The presence of multicollinearity can be too devastating because it can lead to wrong inference of the variables. The existence of multicollinearity in the dependent and independent variables can either understate or overstate the standard error of the variables. Correlation analysis helps in

identifying the degree of association among the explanatory variables.

The correlation test shows CPI exhibits less than 0.5 correlation with UEM. This correlation seems to be intangible to cause serious devastating effect of multicollinearity problem. Meanwhile, the correlation between UEM and other variables was weak. Similarly, GDP also exhibits low correlation with other explanatory variables. In general, most of the explanatory variables do not report strong correlation with each other. This implies that cares will be taken while estimating the model in order not to understate or overstate the standard error.

**Variance Inflation Factor**

It is very important for model to be free from the problem of multicollinearity because of its devastating effect on the model consistency and efficiency. The study adopts the variance inflation factor in assessing the degree of multicollinearity among the variables. The outcome of the analysis is reported in table 4. The result of the VIF shown in table 4 indicates that all the variables report both centred and uncentred VIF that were less than 4. VIF less than 4 implies that the degree of the multicollinearity is bearable.

**TABLE 4: Variance Inflation Factors**

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
CPI	0.021499	2.580	2.311
EXR	0.009255	2.801	2.375
GDP	915.1645	2.362	2.104
INT	3321.398	2.957	2.541
UEM	24684.44	2.8608	2.527
C	38.51827	4.2661	NA

Source: Authors' Computation (2022)

**Panel Unit Root Test**

Panel unit root test was conducted through the use of Levin, Lin & Chu t\* and Im, Pesaran and Shin W-stat. The result of Levin, Lin & Chu t\* revealed that the null of common unit root process should be rejected; this indicates a shared stationarity process among the firms in the variables. The variables report individual stationarity at level, according to Im, Pesaran, and Shin's W-stat, which rejects the null of the individual unit root process. This suggests that the variables' order of integration was

the same. This result demonstrated that the variables under investigation passed the test to rule out the presence of a unit root, indicating that they are stationary at level.

**Table 5: Panel Unit Root Test**

Variable	Levin, Lin & Chu t*		Im, Pesaran and Shin W-stat		Remark
	Statistics	p-value	Statistics	p-value	
DPR	-28.6599	0.0000	-7.57446	0.0000	I(0)
UEM	-6.11706	0.0000	-3.99205	0.0000	I(0)
INT	-3.16636	0.0000	2.97276	0.0000	I(0)
EXR	-8.34456	0.0000	-4.22904	0.0000	I(0)
CPI	-8.70695	0.0000	-8.12321	0.0000	I(0)
GDP	-10.3917	0.0000	-11.0641	0.0000	I(0)

Source: Authors' Computation (2022)

**Analysis of Regression and Generalised Method of Moments (GMM)**

This study adopted panel regression after considering the fixed and random effects. The Hausman test indicates that fixed effect model is more appropriate than the random effect. Also, the study conducted heteroskedasticity and serial correlation test with a view in obtaining an efficient and robust model. The result of the test as reported in table 6 shows that there is no problem of heteroskedasticity and serial correlation. More so, this study adopted the GMM as the robustness check.

**Table 6: Summary Result of macro-economic factors influencing dividend payout policy.**

	Fixed Effect			Random Effect		
	Coefficient	t-statistics	p-value	Coefficient	t-statistics	p-value
CPI	-0.0783**	-2.0107	0.0452	-0.0810**	-2.1340	0.0335
LOG(GDP)	0.1299**	2.1134	0.0352	0.1425	0.1307	0.8961
INT	-0.6245	-1.1537	0.2495	-0.6127	-1.1357	0.2568
UEM	-0.0365**	-2.0117	0.0449	-0.0338	-0.9733	0.3310
EXR	0.0178	0.3127	0.7547	0.0187	0.3286	0.7426
C	-1.4600	-0.1221	0.9029	-1.6087	-0.1412	0.8877
R <sup>2</sup>	0.6735			0.4181		
Adjusted R <sup>2</sup>	0.5843			0.3452		
F-statistic	29.9432			11.4108		
Prob(F-statistic)	0.0000			0.0000		
Hausman test	28.4198(p= 0.0000)					
Panel Cross-section Heteroskedasticity LR Test	19.4467(p=0.7901)					
Serial Correlation test	0.1593(p=0.8734)					

**Source:** Authors' Computation (2022) **Note:**  
 \*\*significant at 5%

Five macroeconomics variables were used in achieving the objective of this study. No firm is immuned from macroeconomics stability and

level is robust, the firm will likely have tendency of

**Table 7: GMM Model of Effect of Macro-economic Factors Dividend Payout Policy**

GMM Model			
	Coefficient	t-statistics	p-value
DPR(-1)	0.0834	2.4649**	0.0143
CPI	-0.0736	-1.9808**	0.0486
LOG(GDP)	0.8707	2.7646*	0.0060
INT	-7.2258	-2.2088**	0.0280
UEM	-0.0747	-0.8911	0.3736
EXR	0.0201*	2.82*	0.0010
Wald chi2(6)	37.9327		
Prob > chi2	0.0000		
Sargan test	14.4321		
Sargan p-value	0.1661		
AR(2) test	--0.6454		
AR(2) p-value	0.8061		

Note: \*\*\*significant at 1% level of significance \*\*significant at 5% level of significance

Source: Authors' Computation (2022)

instability. The outcome of the regression as capture by the fixed effect model indicates that consumer price index which is a proxy for price instability in Nigeria had negative effect on the dividend payout policy of non-financial companies in the country. The variable reports -0.0783

coefficient effect with p-value less than 0.05 and t-value of -2.0107. This implies that price instability had drawdown effect on the company capacity to pay dividend because it induces the cost of doing business and also reduces the consumer purchasing power. During the periods of price instability, companies tend to plough back their profits to cover the high cost of production and investment in long-term projects to ensure expansion and remain in business. As a result of this, little attention is always being placed on dividend payment since they are only fighting for survival. This discovery of negative relationship between consumer price index and dividend payout policy is contrary to the findings of Khan, Ullah, Ali & Khan (2019) and Olayiwola (2019).

Moreover, the economic growth of the country as captured by GDP exhibited positive effect on the dividend policy of the firms with coefficient value of 0.1299 and t-value of 2.1134. It indicates that when an economy is growing and the aggregate output

paying more dividend. This buoyancy in the economy will lead to increase in the revenue generated by the government and lead to more favourable environmental atmosphere for the companies to operate; hereby influencing their decision to pay more dividends. This is in-line with the arguments of Olayiwola (2019 and Romus, Anita, Abdillah and Zakaria (2020) that more money supply in the economy due to great acceleration in government revenues in the macroeconomic environment has a great possibility to ginger dividend payments of non-financial quoted companies. However, the finding of this study is contrary to the results of Khan, Ullah, Ali and Khan (2018) and Lotto (2020) where it is believed that a high level of GDP will give room for conducive economic environment that will encourage investment and thereby companies will prefer to re-invest their profits rather than to distribute them in form of dividends to their shareholders.

Similarly, exchange rate showed a positive but insignificant relationship with t-value of 0.3127. Sequel to this result, a unit rise in exchange rate will increase the amount of dividend payout. The implication of this is that as far as exchange rate moves up, the demand of higher cost of capital by the companies' investors to cushion the effect of such rise on their investment in the companies

become inevitable. This finding is in agreement with the claims of Khan, Ullah, Ali & Khan (2018) and Olayiwola & Ajide (2020)

Interest rate exhibited negative relationship with t-value of -1.1537. This is in line with theoretical expectation as it relates to dividend policy of the non-financial firms. Every organisation always desires expansion and the need for more funds to achieve such objective is inevitable. There are several options available to firms to raise such funds to meet their financial obligations. The companies may resolve to borrowing, issuing more shares or retaining part of the profits realised for a certain period of time. Although changes in the interest rate does not have a strong influence on dividend payment of organisations, the implication of this result is that, as interest rate goes higher, the companies may consider the cost of borrowing has not favourable and rather resolve to raise funds through ploughing back of profits which may reduce the amount being paid as dividend to the shareholders. This result is in conformity with the findings of Khan, Ullah, Ali and Khan (2018) but negates the findings of Romus, Anita, Abdullah & Zakaria (2020).

Unemployment rate exhibited significant negative relationship with dividend payout policy of the firms with coefficient of -0.0365 and t-value of -2.0117. The r-square of the model report that about 67% of the variation was accounted for by the explanatory variables. More so, the F-value of 29.9. This implies that a rise in the rate of unemployment weakens the aggregate demand of an economy which arguably will lead to fall in economic activities and thereby reduce revenue of firms. However, this is not in agreement with the result of Khan, Ullah, Ali & Khan (2018).

Also, this study adopted the General Method of Moment (GMM) as the robustness check since the static model initially used is prone to inconsistency and biased estimates which could be attributed to the likelihood of endogeneity, caused mostly by the omitted variables bias. GMM is hinged on the use of instrumental variables to address the likelihood of endogeneity problem that can arise among independent variables and as such address the problem of weak instrument through augmentation.

Sargan test was conducted to check the instrument validity. The result of the Sargan test in the table 4.61 below shows that the instruments are valid with the p-value greater than 0.05. It depicts the fact that they are not correlated with the error term. More so, the serial correlation test conducted through the Arrelano-Bond test shows that the model is free from autocorrelation, which is line with the fixed effect model post estimation result.

The result of the GMM model shows that consumer price index has a negative relationship with dividend policy. This implies that rise in the country level of price will reduce the dividend payout of the firms ( $t = -1.98$ ,  $p < 0.05$ ). Rise in inflation will increase firm cost of business; it will contribute to the rise in operating expenses of firm. Inflation will lead to rise in raw materials and possibly wage increase demand. It will also reduce the household demand for product, hence leads to reduced net income of firms. This GMM result is similar to the result of the OLS. However, the GMM result revealed a more significant relationship compare with the OLS result.

In the same vein, it is expected that rise in economic activity will lead to rise in dividend payout of firms. The result in table 4.61 indicates that economic growth proxy by gross domestic product positively induces the dividend payout of the firm. It exhibits positive relationship with dividend payout with a coefficient of 0.8707 and t-value of 2.7646 which is close to the outcome of the static model in table 4.6. This is an indication that when the economic environment is stable and conducive, firms will be able to carry on their business activities smoothly and with great potential of making great profit and thereby encouraged to pay more dividend to their shareholders. This GMM result is similar to the result of the OLS.

Furthermore, the variable of interest rate exhibited negative relationship with the dividend payout of the firms. The coefficient of interest rate was -7.2258 and t-value of -2.2088. This result shows that dividend payout of the firms reduces when interest rate increases. It is expected because rise in interest rate impedes the investment of the firm and capacity to mobilise funds. This result showed a more significant relationship compared with that of the OLS.

In the same vein, rising unemployment rate in any economy is not friendly because it affects new investment, reduces purchasing power and often leads to recession. The result in the table indicates that unemployment leads to reduction in the firm dividend payout with coefficient of -0.0747 and t-value of -0.8911. This result is consistent with the result of the OLS. The study also discovered that strong naira is a big plus to investment in Nigeria because firms will enjoy low cost of imported input and reduce supply side inflation. The result of the model indicates that exchange rate exhibited positive relationship with dividend payout with coefficient of 0.0201 and t-value of 2.82. This is in conformity with the result of the OLS.

##### **5. CONCLUSION AND RECOMMENDATIONS**

This study assessed the macro-economic factors influencing dividend payout policy of non-financial quoted companies in Nigeria. In order to achieve this objective, several empirical literatures such as Jabbouri (2016), Yusof and Ismail (2016), Al-Najjar and Kilincarslan (2017), Jaara, Alashhab and Jaara (2018), Ullah, Bagh and Arif (2019), Justyna, Magdalena & Magdalena (2020), Gul, Ullah, Gul & Rasheed (2020) were perused. The perusal of these studies revealed that some issues still need to be clarified. For instance, previous studies have discovered several industry-specific factors as drivers of dividend policy but with no consensus on the major factors which drive dividend policy. Also, study on the role of macro-economic factors in determining dividend payout policy among non-financial quoted companies in Nigeria remains scarce. This is a missing gap in the extant literatures in Nigeria which is the focus of this study. Results of the OLS and GMM indicated that all the macro-economic variables considered in this study are essential when it comes to dividend payout decision of quoted companies in Nigeria.

The findings and conclusion reached in this study have economic implications on dividend policy decision among non-financial listed companies in Nigeria. Therefore, to ensure better dividend payout, the below recommendations are made:

- a) Since this study established the declining state of dividend payment among the non-financial quoted companies in Nigeria; the companies should repackage their dividend policy to give room for alternative means of rewarding the shareholders

who have invested their hard earned money in the business activities of the firms

- b) There should be frequent review of dividend policy by the management of the companies so as to attract more investors
- c) Also, the influencing power of macro-economic variables such as Gross Domestic Product, Consumer Price Index, Exchange Rate and Interest Rate on dividend payout policy is revealed sacrosanct in the study; hence, the Federal Government is enjoined to put in more effort to make policies that will resuscitate the country's economy from its state of comatose so that corporate organisations can operate in a more conducive and friendly environment. When an economy is growing and the aggregate output level is robust, the firms' performance will be enhanced and they will likely have tendency of paying more dividend.

##### **References**

- [1] Abdulkadir, R. I., Abdullah, N. A. & Wong, W. C. (2016). Dividend payment behaviour and its determinants: The Nigerian evidence. *African Development Review*, 28(1), 53–63.
- [2] Aqel, S. (2016). An Empirical Investigation of Corporate Dividend Payout Policy in an Emerging Market: Evidence from Palestine Securities Exchange. *Research Journal of Finance and Accounting*, 7(6), 7-16.
- [3] Allen, F., Bernardo, A. E. & Welch, I. (2000). A Theory of dividends based on tax clienteles. *The Journal of Finance*, 55 (6), 2499-2536.
- [4] Al-Najjar, B. & Kilincarslan, E. (2017). Corporate Dividend Decisions and Dividend Smoothing: New Evidence from an Empirical Study of Turkish Firms. *International Journal of Managerial Finance*, 13, 1–38.
- [5] Al-Yahyaee, K. H., Pham, T. M. & Walter, T. S. (2011). The Information Content of Cash Dividend Announcements in a Unique Environment. *Journal of Banking and Finance*, 35 (3), 606-612.
- [6] Bostanci, F., Kadioglu, E. & Sayilgan, G. (2018). Determinants of Dividend Payout Decisions: A Dynamic Panel Data Analysis of Turkish Stock Market. *International Journal of Financial Studies*, 1-16

- [7] Bozos, K., Nikolopoulos, K. & Ramgandhi, G. (2011). Dividend Signaling under Economic Adversity: Evidence from the London Stock Exchange. *International Review of Financial Analysis*, 20 (5), 364-374.
- [8] Brav, A., Graham, J. R., Harvey, C. R. & Michaely, R. (2005). Payout Policy in the 21st Century. *Journal of Financial Economics*, 77 (3), 483-527.
- [9] Dasilas, A. & Leventis, S. (2011). Stock Market Reaction to Dividend Announcements: Evidence from the Greek Stock Market. *International Review of Economics and Finance*, 20 (2), 302-311.
- [10] Denis, D. (2001). Twenty-five years of Corporate Governance Research and Counting. *Review of Financial Economics*, 10, 191-212.
- [11] Denis, D. K. & McConnell, J.J. (2003). International Corporate Governance. *Journal of Financial and Quantitative Analysis*, 38(1), 1-36.
- [12] Ebrahim & Rabab, H. A. H. (2017). Dividend Policy, Stock Liquidity and Stock Price Informativeness. Phd Thesis at University of Bradford.
- [13] Gul, S., Ullah, I., Gul, H. & Rasheed, S. (2020). Factors Affecting Dividend Policy: Empirical Study from Pharmaceutical's Companies in Pakistan (PSX), *European Journal of Business and Management Research* 5(5), 1-6
- [14] Jaara, B., Alashhab, H. & Jaara, O. (2018). The Determinants of Dividend Policy for Non-financial Companies in Jordan. *International Journal of Economics and Financial*, 8(2), 198-209.
- [15] Jabbouri, I. (2016). Determinants of Corporate Dividend Policy in Emerging Markets: Evidence from MENA Stock Markets. *Research in International Business and Finance*, 37(c), 283-298.
- [16] Jacob, J. & Taslim, F. A. (2017). The Impacts of The Ratio of Liquidity, Activity and Profitability Towards Company Value With Dividend Policy As Intervening Variables. *Journal of Business and Management (IOSR-JBM)*, 19(10), 01-07.
- [17] Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure. *Journal of Financial Economics*, 3, 305-360
- [18] Justyna, F., Magdalena, M. & Magdalena, U. (2020). Determinants of Dividend Payout Decisions- The Case of Publicly Quoted Food Industry Enterprises Operating in Emerging Markets. *Economic Research-Ekonomska Istraživanja*, 33(1), 1108-1129.
- [19] Khan, F., Ullah, A., Ali, M. A. & Khan, M. I. (2018). The Relationship between the Macroeconomic Variables and the Dividend Payout ratio, of the Textile Sector Listed on the Pakistan Stock Market. *Sarhad Journal of Management Sciences (SJMS)*, 4(1), 111-121.
- [20] La Porta, R., Lopez-de-Silanes, F., Shleifer, A. & Vishny, R. W. (2000). Agency Problems and Dividend Policies around the World. *The Journal of Finance*, 55 (1), 1-33.
- [21] Lestari, H. S., Febrian, E., Nidar, S. R. & Sudarsono, R. (2019). Factors Influencing of Dividend Payout in Indonesia Stock Exchange. *American Research Journal of Business and Management*. 5(1), 1-7.
- [22] Lotto, J. (2020). On An Ongoing Corporate Dividend Dialogue: Do external influences Also Matter in Dividend Decision? *Cogent Business and Management*, 7(1), 1-13.
- [23] Malik, F. Gul, S., Khan, M. T., Rehman, S. & Khan, M. (2013). Factors Influencing Corporate Dividend Payout Decisions of Financial and Non-Financial Firms. *Research Journal of Finance and Accounting*, 4(1), 35-46
- [24] McCluskey, T., Burton, B., Power, D. & Sinclair, C. (2006). Evidence on the Irish Stock Market's Reaction to Dividend Announcements. *Applied Financial Economics* 16 (8), 617-628.
- [25] Miller, M. & Modigliani, F. (1961). The Hypothesis of Normality of Statistical Model Test Result. *Journal of Business*, 34(4): 411-433.
- [26] Nnadi, M. Wogboroma, N. & Kabel, B. (2013). Determinants of Dividend Policy: Evidence from Listed Firms in the African Stock Exchanges. *PANOECONOMICUS*, 6, 725-741
- [27] Nuredin, M. (2012). Determinants of Dividend Policy of Insurance Companies in Ethiopia, A

- Thesis Submitted to Addis Ababa University, Ethiopia.
- [29] Olang, M. A., Akenga, G.M. & Mwangi, J.K. (2015). Effect of Liquidity on the Dividend Payout by Firms Listed at the Nairobi Securities Exchange, Kenya. *Science Journal of Business and Management*, 3(5), 196-208.
- [30] Olayiwola, J. A. (2019). Dividend Payout Policy, Firms' Investment Behaviour and Value of Selected Quoted Companies in Nigeria (2001-2016). PhD Thesis of Obafemi Awolowo University, Ile-ife Osun State.
- [31] Olayiwola, J. A. & Ajide, F. M. (2020). Do Oil Price and Institutional Quality Matter for Dividend Policy in Nigeria? *Amity Business Review* 20, (2), 47-62.
- [32] Olusola, B. (April, 3<sup>rd</sup> 2018). 84 Companies Fail to Pay Dividend in 5 Years. *Leadership Newspaper*. Retrieved from <https://leadership.ng/2018/04/03>
- [33] Pinto, G. & Rastogi, S. (2019). Sectoral Analysis of Factors Influencing Dividend Policy: Case of an Emerging Financial Market. *Journal of Risk and Financial Management*, 12, 1-18.
- [34] Priya, P. V. & Mohanasundari, M. (2016). Dividend Policy and Its Impact on Firm Value: A Review of Theories and Empirical Evidence. *Journal of Management Sciences and Technology*, 3(3), 59-69.
- [35] Romus, M., Anita, R., Abdillah, M. & Zakaria, N. (2020, April). Selected Firms Environmental Variables: Macroeconomic Variables, Performance and Dividend Policy Analysis. *IOP Conf. Ser.: Earth Environ. Sci.* 469 012047. Retrieved from [iopscience.iop>volume](https://iopscience.iop.org/volume)
- [36] Ross, S. A., Westerfield, R. W. & Jordan, B. D. (2011). *Fundamentals of Corporate Finance* (7th ed.). Irwin: Mc-Graw Hill.
- [37] Sawitri, A. N. & Sulistyowati, C. (2018, August). Stock Liquidity and Dividend Policy. The 2018 International Conference of Organizational Innovation, *KnE Social Sciences*, (pp. 1192–1202).
- [38] Szymanska, A. G. (2017). Impact of a Company's Dividend Policy on the Liquidity of Shares Listed on the Warsaw Stock Exchange. *Financial Internet Quarterly, e-finance*, 13(3), 24-32.
- [39] Ullah, K., Bagh, T. & Arif, M. (2019). Factors Affecting Dividend Policy: An Empirical Investigation of Food Sector of Pakistan. *Research Journal of Finance and Accounting*, 10(5), 12-28.
- [40] Wanjiru, M. Z. (2013). The Effects of Macroeconomic Variables on the Dividend Payout of Firms Listed at the Nairobi Securities Exchange. A Master Thesis Submitted to the University of Nairobi
- [41] Yusof & Ismail (2016). Determinants of dividend policy of public listed companies in Malaysia. *Review of International Business and Strategy*, 26(1), 88 – 99
- [42] Yusuf, R. A. (2019). Factors Influencing Dividend Payout Policy of Firms Listed on the Nigerian Stock Exchange. *Advances in Economics and Business*, 7(6), 256-265 <http://www.hrpub.org>