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Determinants of Dividend Policy: Empirical Evidence from Listed Oil and Gas Firms in Nigeria

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Abstract. This research initiative intrinsically examined determinants of dividend policy amongst listed oil and gas firms in Nigeria. Specifically, the paper examined the dynamic interactions: past dividend payout (DP (-1)), profitability (PROF), growth opportunities (GRO), leverage (LEV), liquidity (LIQ), firm size (FS), tax policy (TAP) and ownership structure (OS) have on dividend payout (DP). To achieve these specific objectives, the paper sourced data from ten sampled firms from 2007 to 2022, adopting the dividend relevance and irrelevance theories. In terms of methodology, the research adopted the Extended System Generalized Method of Moments (GMM) estimation technique. The research confirmed that past dividend payout, profitability, liquidity, growth opportunity and ownership structure are major positive drivers of dividend payout while higher tax policy and leverage reduce dividend payout. However, firm size has a minimal effect on dividend payout. Consequent upon the various discerned outcomes, the conclusion drawn is that, past dividend payout, profitability, leverage, growth opportunity, liquidity, tax policy and ownership structure. Thus, the research submits that while policy makers of sampled firms are developing their dividend payout model, they should factor in past dividend payment into the model. Again, the regulators guiding oil and gas firms in Nigeria must insist that sampled firms adhere with the legal restriction on the maximum dividend firms should pay when they declare huge profit. Also, they must as a matter of prominence, insist that the sampled firms pay out dividend from accumulated net profits realized without necessarily disrupting future development goals of the sampled firm.

Keywords: Past Dividend Payout, Growth Opportunities, Leverage, Liquidity, Firm Size, Profitability.
JEL Classification: G3; G35.

1. INTRODUCTION

The financial manager is usually faced with myriads of financial decisions namely: financing, investment, liquidity and dividend decisions. However, dividend decision in finance, is a foremost fundamental financial decision. Specifically, this decision has crucial impact on a lot of stakeholders namely: shareholders, lenders, regulatory authorities, consumers, employees, and even the potential investors. According to Amoah (2024), dividend decision must determine inter alia the timing, the amount and other factors that affect dividend payout. The intent is to meet the diverse stakeholders' preference without ultimately reducing the firm's earning power and cash flows.

Dividend payout policy is the policy that explicitly spelt out the firm's portion of its earnings that is paid out as dividend to shareholders at the end of an accounting year. Usually, when a firm makes profit, the finance manager is faced with the decision whether to pay out the entire profit or pay part and retain part of the profit. Thus, the portion that is paid out is regarded as the dividend payout ratio and the portion not paid out as dividend is termed Retained profit or plough-back capital (Chandra & Vivien, 2021). Accordingly, there are four (4) types of dividend policies namely: stable, regular, irregular and the no dividend policy (Ashish, 2023). When a firm decides to pay dividends to its shareholders, the five following ways are opened: cash dividends, stock dividend, liquidating dividend and property dividend.

The theory of dividend policy is traced to the classical works of Linter (1956). Accordingly, the model holds that a firm may decide to partially adjust its dividend payout ratio in line with the rise in both targeted payout ratio and earnings per share. However, in 1961, the Miller and Modigliani (popularly known as M & M, 1961) developed the theory of dividend irrelevance. The theory suggest that the firms' dividend payout does not add value to the firm share price and as such is irrelevance. The M & M (1961) theory was seriously and severally critiqued on the ground that the assumptions were not realistic. The other financial theorists who came on board after the M & M were: Tax preference theory of Elton and Gruber (1970), the life cycle theory of Mueller of (1972); Agency Theory of Dividend of Easterbrooks (1984); Pecking order theory of Dividend of Myers of (1984); Flow theory of Dividend of Jensen of (1986); the Signaling theory of Dividend of Bhattacharya of (1979) and the Catering Theory of Dividend of Baker and Wurgler (2004).

According to Hashir, Shahid, Sajid and Umair (2013), dividend payout policy is one of the top ten (10) unresolved issues of Finance. It was on this thought process that Blacks (1976) posit that dividend payout is like a puzzle, and that the more you look at dividend, the more it seems like a puzzle that do not just fit together.

The puzzling nature of dividend payout has created vent for more works on the subject. Also, extant literature on dividend payout is replete and awash with contradictory findings on the topic. In fact, studies in Kuwait, Ghana, Turkey, Pakistan, Indonesia, Sri Lanka etc. all have contradictory findings on the topic. Again, there is a dearth of literature in oil and gas as it relates to the topic. Most studies on the topic focused on sectors like manufacturing, conglomerates, the banking sector but there is paucity of literature on oil and gas firms. This

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is the gap that this study seeks to fill.

To the researchers' best of knowledge, this research effort contributes to existing studies as it presents a robust dividend policy model not in the Nigerian context only but also on a global scale. Justifiably, earlier studies did not considered all the eight dividend payout determinants which are past dividend payout, profitability, leverage, growth opportunities, liquidity, tax policies, firm size and ownership structure. Hence, the current study extends its purview beyond the Nigerian context, thereby offering a more holistic and global view on the determinants of dividend payout policies. Consequently, the study provides relevant insights to firms within and outside the Nigerian context on how to determine dividend payout ratio. Another area which the current study contributes to extant dividend policy studies lies on the need for dividend policy makers of sampled firms to factor in past dividend payment into their dividend payout model while developing such model. Lastly, from the lens of theoretical contributions, the study was able to throw more explanation on the dividend relevance and irrelevance theories propounded by dividend policy theorists.

Furthermore, the paper equips policymakers on how best to handle issues associated with dividend payout. By offering a more clearer understanding on the determinants of dividend policy, it aid in formulating efficient strategies targeted at meeting the needs of different stakeholders. The paper has some policy implications for foreign relations, researching into dividend retention and dividend payout studies which often transcend beyond the Nigerian context. By unraveling the extent of connectedness among profitability, leverage, growth opportunities, liquidity, firm size and ownership structure, the research help management of firms globally on the timing and the amount to pay as dividend to shareholders (equity-holders).

The remaining sections of this paper are structured as follows. Section 2 delved into the review of extant literature with emphasis on addressing conceptual, theoretical, and empirical issues which surrounds the subject. Section 3 detailed the data employed alongside the method of data analysis. Section 4 unveils our empirical findings thereby provides a wide-range analysis. Lastly, section 5 draws tenable conclusions in tandem with established findings alongside policy recommendations both for the current and future studies.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

This section reviewed extant literature and also developed testable hypotheses:

2.1. Past Dividend Payout

One of the major factors which motivates firms to payout dividend is past dividend payout. Usually, current dividend payment is a function of previous dividend payments while future dividend payment is a function of current dividend payment. Hence, it is expected that, rise in past dividend will increase current dividend payment. Consequently, the study hypothesized as follows:

H_{01}: Past dividend payment increases dividend payout decisions amongst sampled firms.

2.2. Profitability

Profitability refers to the excess of a firm income over expenses in a given accounting year. Many firms would not hesitate to recommend the payment of dividend when adequate profit is made. Akolor and Gujral (2024); Mogire and Muturi (2024); Angela and Daryant (2024); Amoah (2024); David and Alao (2021) posit that profitability is a major determinants of dividend payout and it support signaling theory as it helps to boost the performance of the firm to the outside world. Whereas, Abdullah (2021) reported that profitability had negative impact on dividend payout.

As a result of the above contradictory findings, the study hypothesized as follows:

H_{02}: Profitability reduces dividend payout decisions amongst sampled firms.

2.3. Leverage

Leverage refers to the totality of the firms' debts in relation to the shareholders' fund (equity). Most studies argued that leverage negatively affect dividend payout to firms. They posit that highly levered firms rather them mop cash to share for shareholders as dividend, they would rather mop cash to maintain their creditors and fulfill their future obligations.

Studies that finds negative impact of leverage on dividend payout includes: Akolor and Gujral (2024); Abdullah (2021);. However, studies with positive impact of leverage on dividend payout includes: Chindengwike (2024); Sulistyawati, and Yulianti (2024); Džidić and Živko (2019). Meanwhile, Mohapatra, Misra, Chaudhury, & Chhatoi (2024) evidenced positive yet minimal effect. The contrast in existing literature compelled this study to hypothesizes as follows:

H_{03}: Leverage reduces dividend payout decisions amongst sampled firms.

2.4. Growth Opportunities

Firms with very high growth opportunities are most likely to payless dividend to their shareholders but would rather retain greater portion of their earnings to finance new projects. In other words, new firms and high growth firms would choose to use retain earnings as it major sources of financing its expanding new projects in order to reduce cost of external finance. It also further implies that growth opportunities firms will normally have negative impact on dividend payout.

The above follows postulations of the pecking order theory. The theory states that when a firm has a need for a new investment, they would follow the following order of the financing sources: retained earnings, secured debt and equity.

The studies that reports negative impact of growth opportunities with dividend payout includes:Ebere, Onuora, and Ofor (2023); David and Alao (2021). However, extant literature that report positive impact of growth opportunities includes:Akolor and Gujral (2024); & Umar (2023).

The contradictory findings compelled the study to hypothesize as follows:

Ho_4: Growth opportunities reduces dividend payout decisions amongst sampled firms.

2.5. Liquidity

Most studies argue that highly liquid firms tend to pay high dividend than a firm with low level or unstable liquidity. Some other authors opined that firms with increased earnings and high level of liquidity tend to pay high dividend than firms with decreasing earnings and unstable liquidity.

Ani, Okorie and Igwe (2023) posit that dividend payout depends more on liquidity than current earnings. In the same vein, other works that have reported positive impact of liquidity and dividend payout inclues: Mogire and Muturi (2024); Chindengwike (2024); Onuorah (2023); Oniyide and Mojekwu (2023). Whereas, works of Ali Taher and Al-Shboul (2023); Mazouz, Wu, Ebrahim and Sharma (2023); Chijuka and & Hussein (2023) evidenced negative impact of liquidity on dividend payout. Consequent upon the mixed findings, the study hypothesized as follows:

Ho_5: Liquidity has negative impact on dividend payout decisions amongst sampled firms.

2.6. Tax Policy

Literature has it that lower tax bracket groups like pension funds and retired investors prefers higher cash income and as such prefers high dividend payout (Ross, 1977). According to Allen, Bernardo and Welch (2000) higher dividend payout attracts institutional investors since they are taxed less than the retail investors.

The work of Ani et'al (2023) revealed positive tax impact on dividend payout. The above findings support the tax preference theory of Elton and Gruber of (1970). However, Al-malkawi (2007) finds no significant impact of tax on dividend payout.

Following the above contradictory findings, the study hypothesized as follows:

Ho_6: Tax policy reduces dividend payout decisions amongst sampled firms.

2.7. Firm Size

Firm size is a determinant of dividend payout. According to Alli and Khan (1993) matured firms pay lower transaction cost compared to young firms in sourcing for new funds and as such pay higher dividends. In the same vein, Holder, Fredrick, Langrehr and Hexter (1998) argued that unlike young and growing firms, matured firms have easy access to funds in the financial market and as a result depends less on internally generated fund (retained earnings) which allows them to pay higher dividends.

Literature also has it that matured firms could negatively impact on dividend payout. They argued that matured firms reinvest their retained earnings into assets rather than paying dividends to shareholders (Hafeez & Ahiya, 2009).

The studies that reports positive impact of firm size on dividend payout includes: Moseri, Owualah and Ogbebor (2024); Yusuf and Ismail (2016), Džidić and Živko (2019). However, negative impact of firm size on dividend payout were reported in Salman, Giwa and Umar (2013). Consequent upon the mixed findings of the above, the study hypothesized as follows:

Ho_7: Firm size reduces dividend payout decisions amongst sampled firms.

2.8. Ownership Structure

Ownership structure can be looked at from the point of view of insider ownership structure and outsider ownership structure. When the percentage of insider ownership structure is very high, the lower will be the dividend payout. This is because they will prefer retention of earnings hence dividend payout will be low (Kozeff, 1982). For the outsider ownership structure, when the percentage is high, the higher will be dividend payout because they would prefer cash dividend payment than retention of earnings.

Tijjani and KAfiya (2023); Seatiawam, Bandi, Phila and Trinugroho (2016) reported that combine ownership has positive significant effect on dividend payout. Similarly, Hafeez and Attiya (2009) posit that increased insider ownership structure reduces dividend payout. However, Idris, Okpanachi, Ahmed, and Tauhid (2024) reported similar output. Using a sample of 11 Nigerian banks from 2009 to 2019, Tnushi, Yahaya, and Agbi (2023) evidenced that the decision to payout dividend though factor by ownership structure, however, both ownership structure and dividend payout have mixed effect depending on the form of ownership. Also, while ownership concentration, institutional shareholdings and foreign shareholdings encourages firms to declare more dividends, managerial shareholdings dissuades firms from declaring more dividend. Hence, they submit that capital providers must as a matter of prominence watch-out for the ownership structure of the firm before investing in any firm.

Flowing from the above obvious mixed findings, the study is motivated to hypothesize as follows:

Ho_8: Ownership structure reduces dividend payout decisions amongst sampled firms.

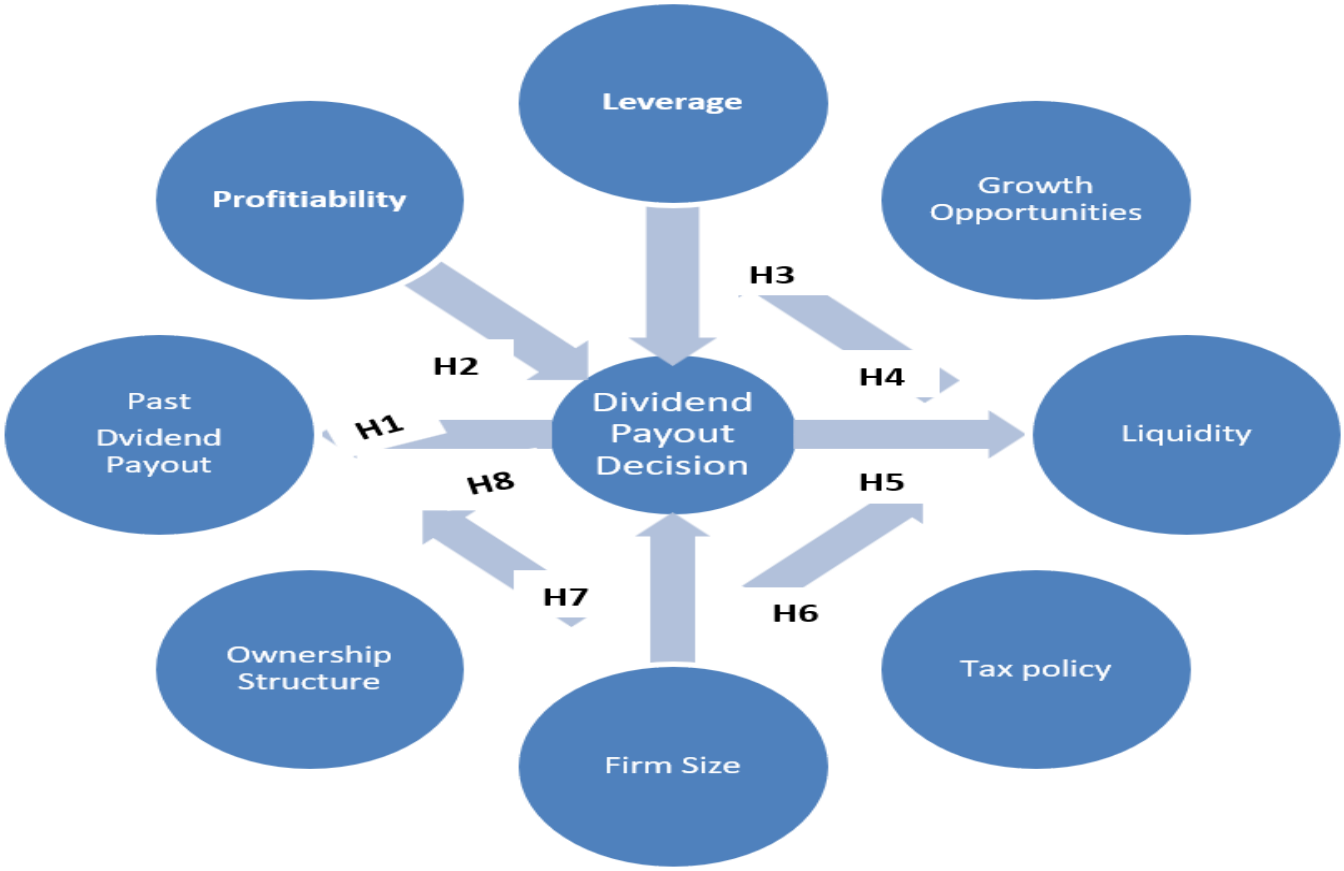

Figure 1: Research Conceptual Framework.

2.9. Dividend Payouts Theories

One of the major intriguing yet highly controversial issues within the confine of dividend payout lies on whether dividend payments are relevant or not. These two conflicting arguments formed the two broad classifications of dividend theories which are: dividend irrelevance theory and dividend relevance theory. Specifically, the dividend irrelevant theory as championed by Modigliani and Miller (1961) stresses that firm value is not factored by the amount of dividend which a firm pays instead what affect the firm's investment policy especially where the market is perfect, there are no information gap, no transaction cost, investors are rationale among others. The rationalization behind this is that, dividend policy is a residual of the firm's financing policy and must not be treated as a secret policy. Hence, dividend policy is a passive residual. Again, investment policies are fixed. As such, any change in the current structure of the firm's investment policies can be optimally financed by the priced share sales. Lastly, should investors desire more cash; they may sell-off their investment portfolio (Tran, 2024).

As opposed to the dividend irrelevance theory championed by both Modigliani and Miller in 1958, the dividend relevance theory as championed by both Gordon and Walter in 1959 and 1963 respectively stresses that dividend payment improves firm value even in a perfect market condition (Gordon, 1959; Walter, 1963). Specifically, Gordon stressed that investors prefers to be paid higher dividend than lower dividend. Similarly, most investors prefer present dividend (D_0) than future capital gain. This is because the future is uncertain even in a perfect world and that the firm may decide to recall such decision should management foresee a huge investment opportunities that will be highly beneficial to the firm. Hence, Gordon proposed three (3) lines of arguments to buttress the reason for repurchasing dividends: (i) dividends and earnings (ii) dividend only; & (iii) earnings only. Meanwhile, Walter's dividend model stresses that dividend policy influences firm value and that dividend and retained profits/earnings are the two factors which determine firm value (share price). Again, Walter stressed that firms uses only retained earnings to finance their investment opportunities and that firms may either distribute all their earnings or reinvest them internally immediately profit is made. Consequently, for a firm to maximize its value, the investment policy must be optimum. This is because; investors generally prefer investments with higher return on investment than those with low ROI. Accordingly, the model's theory states that the market price (MP) equals to the present DPS plus a portion of the differences between DPS and earnings per share-EPS (r(E-D)).

Arising from the above presentation, the paper reviewed the following theories:

2.9.1. Agency Theory

Agency theory can be traced to Jensen and Meckling (1976). This theory deals with the relationship which

subsists between owners who happens to be the shareholders otherwise known as principal and the managers and directors who is known as Agent. Just for the single reason that ownership is divorced from control, there exist a conflict of interest between the shareholder and the agent. This conflict in finance is called the agency dilemma or agency conflict.

According to Tran (2024), prior studies confirmed that agency cost arose from the conflict between shareholders versus manager and shareholders versus bondholders and that the payment of dividend reduces agency cost.

Agency conflict or dilemma may occur when stewards/agents takes decisions that are not of the interest of the principal/shareholders. Conflict may occur where there exist a conflict of interest between the few parties, where the principal/shareholder act against the recommendation of the agent/manager and insider trading decisions provided by the principal/shareholder.

According to Kafitasari, Hartikasari, Fitriati and Pratamy (2024), dividend payout policy of a firm helps greatly to reduce agency conflict/dilemma because it reduces the discretionary funds which are available to the stewards/managers and the reduction of agency conflict will increase the firm value.

Empirical studies of Bakri, Ayub, and Gazali (2024); Tran (2024) strongly support the agency theory.

2.9.2. Pecking Order Theory

This theory was formed by Myers (1984). He argues that when a firm wants to invest on a viable project, the firm funding need will first go for the retained earnings, it proceeds to debt only and finally equity only.

Myers and Majluf (1984) posit that firms prefer debt over equity because the cost of debt is lower than the cost of equity. Also, firms depend largely on retained earning financing because it helps to maximize shareholders wealth. Similarly, Strong (1988) contend that, the ranking of internally generated fund followed by debt funding and equity financing by pecking order theory, have given rise to financing hierarchy and has thus led to unambiguous optimal debt-equity mix.

According to Fu (2018), Ham's Lasers Company funding of investment project followed the pecking order theory thus relying more on internal funding and less of equity funding.

Sixpence, Adeyeye and Rajaram (2024); Chaklader, Srivatava, Sharma and Sayeed (2024) reported that firms with larger internally generated funds (retained earnings) have high dividend payout while restraining debt funding which suggest strong negative relationship between debt and dividend payout.

2.9.3. Signaling Theory

Signaling theory can be traced to Ross (1977) though, the theory was further improved upon by a number of financial theorists in the likes of Bhuttacharya (1979), Miller and Rock (1985) & Rodriguez (1992). This theory suggests that when a firm announces an increase in dividend payout, it suggest a positive future prospect (Tran, 2024). Tran (2024) further stated that firms that pays higher dividends are likely to be more profitable than those that pays less dividend. Conversely,when dividend payout decreases, future performance of the firm will be negative(Sharma, Mittal, & Mittal, 2024). The theory follows the concept of games theory.

Impson (1997) argued that when a firm announces her dividend payment, it conveys management position of the firm's future prospect. Thus, investors use this information to evaluate the firm's value.

Empirical evidence suggest positive relationship between dividend announcement and share return includes: Álvarez-Díez, Baixauli-Soler, Kondratenko and Lozano-Reina (2024). Whereas, the empirical evidence that reported negative relationship between announcement and share return is DeAngelo and Skinner (1996).

3. METHODOLOGY

3.1. Data

Data were collected from the annual reports of the ten (10) listed oil and gas firms in Nigeria. The period considered was informed on the basis of data availability. The study adopted the census sampling technique since the study used the total firms in the oil and gas industry. The study spanned from 2007 to 2022 on annual basis. The time frame was chosen on the basis of available data. Informed on the ground that the data sourced are secondary, verifiable and cannot be pounded, the expost facto research design was adopted (Ighosewe, 2021)

The eight dividend payout determinants considered are past dividend payout ratio, profitability, leverage, growth opportunities, liquidity, tax policy, firm size and ownership structure. These indicators underscore the internal and external motivating factors. Again, the variables considered are consistent with prior studies. Worthy to note is that the reason why ownership structure specifically was included into the model was informed on the findings of Tnushi, Yahaya, and Agbi (2023) who evidenced that while ownership concentration, institutional shareholdings and foreign shareholdings encourage firms to declare more dividend, managerial shareholdings dissuades firms from declaring more dividend. However, to avoid scaling problems and at the same time ensure that the series are in uniform, all the variables were logged. Detailed variable descriptions and data source are presented in Table 1.

3.2. Method

Unlike most extent studies, the paper adopted the Extended System Generalized Method of Moments (GMM) approach. This technique is informed on Five (5) grounds. While the first two reasons stresses on the criteria to be met before the GMM approach is used for the analysis, the three other reasons stresses on the

relevance of GMM approach. First, the GMM approach replicates a lag regressed (predicted variable) especially if the regressor (predictor variable) outcome show significant degree of persistence. Secondly, the GMM approach is considered relevant if the N>T condition is attained. Thirdly, the GMM approach accounts for simultaneity and constant variables. This reduces endogeneity issues. The study also included firm variances to support the findings. However, the challenge with the conventional GMM approach is that it fails to consider orthogonal differences. Hence, Roodman (2009) formulated the System GMM approach to address this shortfall. The study by Asongu and Nwachukwu (2017) emphasizes the Extended System GMM estimation method. Again, this approach lessens the over-identification and excessive instrument use. Simiarly, it is contended that the Extended System GMM is preferred due its estimation, validation and robustness superiority over other GMM estimations.

To test the validity of the instruments (regressors), the Sargan J statistic was introduced. The basic rule upon which the Sargan J statistic becomes valid is that the model must be homoscedastic and must not be serially correlated (Kivie & Kripfganz, 2021; Carrasco, M., & Doukali, 2022). To avoid biased estimators' features, a large cross-section unit was used.

The model used for the study was adapted from Dewasiri et'al (2019). Consequently, the extended model is stated thus:

$$DP_{it} = \beta_0 + \beta_1 PROF_{it} + \beta_2 LEV_{it} + \beta_3 GRO_{it} + \beta_4 LIQ_{it} + \beta_5 TAP_{it} + \beta_6 FS_{it} + \beta_7 OS_{it} + \epsilon_{it} \quad (3.1)$$

Equation 3.1 above can be stated in Extended System GMM approach as:

$$DP_{i,t} = \beta_0 + \beta_1 DP(-1)_{i,t-r} + \beta_2 PROF_{i,t-1} + \beta_3 LEV_{t-1} + \beta_4 GRO_{t-1} + \beta_5 LIQ_{t-1} + \beta_6 TAP_{t-1} + \beta_7 FS_{t-1} + \sum_{h=1}^{8} \delta_h w_{hi,t-r} + \eta_i + \varepsilon_i + \varepsilon_{i,t} \quad (3.2)$$

$$DP_{i,t} - DP(-1)_{i,t-r} = (\beta_1 DP(-1)_{i,t-r} - DP(-1)_{i,t-2r}) + \beta_2 (PROF_{i,t-1} - PROF_{i,t-2r}) + \beta_3 (LEV_{t-1} - LEV_{i,t-2r}) + \beta_4 (GRO_{t-1} - GRO_{i,t-2r}) + \beta_5 (LIQ_{t-1} - LIQ_{i,t-2r}) + \beta_6 (TAP_{t-1} - TAP_{i,t-2r}) + \beta_7 (FS_{t-1} - FS_{i,t-2r}) + \sum_{h=1}^{8} \delta_h (w_{hi,t-r} - w_{hi,t-2r}) + (\varepsilon_i - \varepsilon_{t-r}) + (\varepsilon_{i,t} - \varepsilon_{i,t-r}) \quad (3.3)$$

DP_{it} stands for dividend payout of a specific oil and gas firm "i" during the reviewed periods (2007 to 2022) "t". Furthermore, DP(-1), $PROF_{it}$, LEV_{it}, GRO_{it}, LIQ_{it}, TAP_{it}, and FS_{it} stands for past dividend payout, profitability, leverage, growth opportunities, liquidity, firm size and ownership structure of a specific oil and gas firm "i" during the reviewed periods (2007 to 2022) "t". Similarly, $DP_{i,t-\tau}$, $PROF_{i,t-\tau}$, $LEV_{i,t-\tau}$, $GRO_{i,t-\tau}$, $LIQ_{i,t-\tau}$, $TAP_{i,t-\tau}$,$FS_{i,t-\tau}$, indicates the dividend payout, profitability, leverage, growth opportunities, liquidity and firm size of the same firm "i" during the previous period "t" Also, "β_0"denotes constant value. Ownership structure was introduced into the model as control variable as expressed as "W," while "i" stands for the effect specific to each firm. Again, "t" represents time periods while, "ε_{it}" accounts for the stochastic (error) term.

Table 1: Variable Descriptions, Source, and Aprioiri Expectation.

Variable	Abbreviations	Nature of variable	Measurement	Source	Aprioiri expectations
Dividend payout	DP	Dependent	The amount of earnings paid out as dividend to shareholders	Financial statement	Positive (+)
Past dividend payout	DP(-1)	Instrument	GMM Output	GMM output	Positive (+)
Profitability	PROF	Independent	This is the excess of a firm income over expenses	Financial statement	Positive (+)
Leverage	LEV	Independent	The totality of the firms debt in relations to shareholders 'fund	Financial statement	Negative (-)
Growth opportunities	GRO	Independent	The growth in firms net, income year on year	Financial statement	Negative (-)
Liquidity	LIQ	Independent	Current Assets divided by current liability of the firm	Financial statement	Positive (+)
Tax policy	TAP	Independent	Corporation tax to the firms Net profit before tax	Financial statement	Positive (+)
Firm size	FS	Independent	The log value of the firms' total assets.	Financial statement	Positive (+)
Ownership structure	OS	Independent	This study used the binary variable to	Financial statement	Positive (+)

	determine the level of insider ownership structure (proportion of Equity held by managers and the proportion held by outside common equity holders)	

4. STATISTICAL RESULTS AND DISCUSSIONS

This section of this research presents holistic descriptions of the econometric tools used alongside the policy implications of our findings. Key areas considered include the preliminary analysis, main regression result, and discussions of our findings.

4.1. Preliminary Analysis

To ensure that our results meet parametric analysis, some preliminary analyses were done. These results are discussed in the next sub-sections.

4.1.1. Panel Unit Root Test

Before presenting the main regression estimates, the initial preliminary test conducted is the Levin, Lin and Chin, Im, Peseran and Shin, and Fishers ADF tests alongside their order of integrations. This is with the intent to test if the datasets are stationary or not.

Table 2: Panel Unit Root Tests.

Variables	LLC		IPS		ADF		Decisions		
	1(0)	1(1)	1(0)	1(1)	1(0)	1(1)	LLC	IPS	ADF
DP	-4.908*		61.153*	-	24.240*		1(0)	1(0)	1(0)
PROF	-0.615	-3.919	-0.026	-2.082	-0.353	-7.649	1(1)	1(1)	1(1)
LEV	-6.6913*	-	32.483*	-	0.782*	-	1(0)	1(0)	1(0)
GRO	0.859	-1.738***	0.725	-1.220***	0.595	30.989*	1(1)	1(1)	1(1)
LIQ	-1.995**	-	28.931**	-	36.600*	-	1(0)	1(0)	1(0)
TAP	0.481	-7.871*	0.960	71.337*	0.387	48.368*	1(1)	1(1)	1(1)
FS	3.678*	-	34.976*	-	43.420*	-	1(0)	1(0)	1(0)
OS	0.670	-6.0233*	0.82	-6.795	0.405	-5.549	1(1)	1(1)	1(1)

Note: LLC denotes Levin, Lin and Chin, Im, Peseran and Shin denotes IPS; Fishers ADF denotes ADF; *, ** denotes statistical significance at 1% and 5%, respectively.

The panel unit root tests evidenced that dividend payout (DP), leverage (LEV), liquidity (LIQ), and firm size (FS) attained stationarity at 1(0). However, profitability (PROF), growth opportunities (GRO), tax policies (TAP) and ownership structure (OS) did not. When subjected further, profitability (PROF), growth opportunities (GRO), tax policies (TAP) and ownership structure (OS) became stationary at 1(1). By implication, all variables were stationary at 1(0) and 1(1).

4.1.2. Other Preliminary Analysis

Other preliminary tests conducted include Ramsey Reset Test, Breusch-Godfrey Serial Correlation LM Test, and Heteroskedasticity Test: Breusch- Pagan-Godfrey and normality tests were applied. The results of these tests are reported Table 3:

Table 3: Summary of Post Estimate Tests.

Test	F-Statistic	P-value	Decision
Heteroskedasticity Test	2.2740	0.0744*	Homoskedastic
Ramsey Reset Test	3.0297	0.0931*	No omitted Variable
Normality (Jarque-Bera) Test	5.6410	0.0595*	Normally Distributed

Note: * denotes p>5%.

Table 3 evidenced that other preliminary analysis (Heteroskedasticity Test, Ramsey Reset test and Normality (Jarque-Bera)) tests are okay since all their p-values (0.0744, 0.0931 and 0.0595) are above 5%. This suggests that the model is Homoskedastic, no omitted variable and normally distributed.

4.1.3. Model Determination Test

Prior to presenting the extended System GMM approach, three panel model determination tests were conducted. These include: Chow test (CT), Breusch Pagan (BP) LM Test and Hausman Test (HT). Specifically, the CT is used to choose between the common effect and the fixed effect such that if the prob. > F value of the CT is <5%, the fixed effect is chosen but if it is >5%, the CE would be chosen. In like manner, the BP LM Test chooses between the CE and the random effect (RE) such that if the Prob. > Chi^2 of the BP LM test is <5%, the RE is chosen but if it is >5%, the CE is chosen. Meanwhile, the HT is used to choose between the RE and the fixed effect (FE) such that if the Prob. > Chi^2 of the HT is <5%, the FE is chosen but if it is >5%, the RE is chosen. The result estimates are presented in Table 4:

Table 4: Model determination test.

Test	Chow test (Prob. >F)	Lagrange Multiplier Test (Prob. > Chi²)	Hausman test (Prob. > chi²)
Probability	0.000*	0.015**	0.4653
Decision	Common effect	Random effect	Random effect

Note: *, ** denotes 1% and 5%, respectively.

The model determination test evidenced that the CE is preferred over the FE as in the case of the CT. This is because, the Chow test (Prob. >F) value of 0.000 falls within the benchmark for acceptance of the CE. Meanwhile, the LM Test (Prob. > Chi²) of 0.015 suggests that the RE is preferred over the CE since the estimated Prob. > Chi² value is <5%. Similarly, the HT (Prob. > Chi²) of 0.4653suggests that the RE is preferred over the CE since the estimated Prob. > Chi² value is >5%. On the overall, the RE was appropriate for the study. However, to avoid variable over-estimation amongst other issues, the Extended System GMM estimate was adopted. The Extended System GMM estimate is presented in the next sub-section.

4.1.4. Result Presentation

The outcome of the Extended System GMM estimate was presented in Table 5 with respect to dividend payout among its determining power. To further ensure that the Extended System GMM estimate is reliable, the paper introduced the Sargan over-identifying restrictions.

Table 5: Extended System GMM Estimation Involving Orthogonal Forward Deviations Dependent Variable: Dividend Payout (DP).

Variables	Coefficient	Std. error	t-statistics	P-Value
Past dividend (DP(-1))	0.2607	0.0619	4.2128	0.0003
Profitability (PROF)	0.6809	0.2868	2.3741	0.0259
Leverage (LEV)	-0.5963	0.2885	-2.0671	0.0497
Growth opportunities (GRO)	0.1363	0.0662	2.0600	0.0425
Liquidity (LIQ)	0.4571	0.0519	8.8007	0.0000
Tax policy (TAP)	-0.1502	0.0474	-3.1653	0.0039
Firm size (FS)	0.0525	0.0461	1.1393	0.2650
Ownership structure (OS)	0.3563	0.1218	2.9258	0.0045
Constant (C)	1.7991	0.0603	13.2429	0.0000
Diagnostic statistics				
Adjusted R^2		Mean dependent var		2.8225
Instrument rank	6.3730	S.D. dependent var		0.24318
Sargan J statistic	0.0116			

The Sargan J statistic confirms that the instruments (regressors) are valid of lagged levels dated t-3 to t-5 as instruments. Meanwhile, the model reported an adjusted R^2 value of suggesting that having accounted for the degree of freedom (N-K), the model still portend high predictive power. Meanwhile, the Durbin Watson statistic estimated at 2.003881 suggests that the model is free from serial correlation. This further evidence that the model is fit for prediction and policy formulations.

5. DISCUSSIONS

The first major result recorded here is that past dividend pay-out/rates (DP(-1)) affect present year dividend payout. By extension, current year dividend affects future dividend payments. This is rationalized on the ground that current dividends are mostly made out of accumulated profits and not out of accumulated cash. However, most empiricists are silent on this issues; hence, the few research on the topic over the years. Contributively, the current study stressed on the need for dividend policy makers of sampled firms to factor in past dividend payment into their dividend payout model while developing such model.

The analysis as presented in table 5 demonstrates the interplay between dividend payout and its determining factors. The result reaffirmed that the sampled firms' decision to pay dividend is factored by profitability. The study further evidenced that one way through which the management of sampled oil and gas firms can communicate to investors that the firm is financially stable is through payments of higher dividend as presented in the company's market share. This collaborates with the signaling theory but refute the extended Modigliani and Miller (1961). As opposed to the extended Modigliani and Miller (1961), the signaling theory stresses that higher dividend payments is one way through which management and investors information gap can be secretly eliminated (Al-Malkawi, 2007).Akolor and Gujral (2024); Mogire and Muturi (2024); Angela and Daryant (2024); Amoah (2024); David and Alao (2021) posit that profitability is a major determinants of dividend payout whereas Maladjian and Abdullah (2021) reported that profitability had negative impact on dividend payout.

Again, the study reaffirmed that firm leverage is a major predicting factor which reduces the dividend payout of sampled Nigerian firms. By implication, the more levered the sampled firms become, the lower the dividend they declare and vice versa. This is rationalized on the ground that highly levered firms rather them mop cash to share for shareholders as dividend, they would rather mop cash to maintain their creditors and fulfill their future obligations. Another reason behind this, is that highly levered firms have high fixed interest payments to capital providers (lenders). Since management most times care more about sourcing funds to meet future investment goal, more of the funds would be ploughed back into the firm instead of declaring more dividend. The result reaffirmed that the sampled firms' decision to pay dividend is factored by growth opportunity as in the case of profitability. This is informed on the ground that the variable was statistically significant at 5% (OS= <5%).

Again, the result confirmed that growth opportunity affected dividend payout positively, which conforms to our Apriori expectation. The implication of this outcome is that growth opportunities may not reduce dividend payout provided that such decision does not reduce the expansion strategy of the firm. Again, the decision to pay less dividend to shareholders reduce cost of external finance which in most cases lead to dilution of ownership and control. This finding revalidates the postulations of the pecking order theory that when a firm has a need for a new investment, they would follow the following order of sources: retained earnings, secured debt and equity. Similarly, this outcome supports the findings of Ebere et'al (2023); David and Alao (2021) but contradicts the findings of Umar (2023).

A positive and insignificant linkage exists between firm size and the decision of firm to payout dividend to its shareholders. This observed outcome suggests that sampled firms' decision to payout dividend was not factored by the asset base of the sampled firms since it only had minimal effect on dividend payout. This result reaffirmed the submissions of Alli and Khan (1993); Holder et'al (1998) that unlike young and growing firms, matured firms that can access funds from the financial market easily. As a result, matured firms depends less on internally generated fund (retained earnings) which allows them to pay higher dividends. However, the outcome deviated from Alli and Khan (1993); Holder et'al (1998) in that, our findings was found to be statistically insignificant. Also, our findings contend with the submissions of Hafeez and Ahiya (2009) stating that matured firms pay less dividend than young firms since they reinvest their retained earnings into highly income yielding assets.

From table 5, liquidity had a positive (β=0.4571) significant (p-value=0.0000<5%) effect on dividend payout ratio within the reviewed periods. The inference is that the more liquid a firm becomes, the more dividend is expected to be paid. This has some policy implication both to the firms reviewed and beyond in that dividend should not be paid should such decision threatens a company's liquidity and that; the amount of dividend to be paid may be limited by the amount of available cash. By extension, firms should trade-off among liquidity and profitability before dividends should be paid. This is in conformity with our Apriori expectations.

The above findings is consist with the findings of Mogire and Muturi (2024); Chindengwike (2024); Onuorah (2023); Oniyide and Mojekwu (2023) evidencing that firms with increased earnings and high level of liquidity tend to pay high dividend than firms with decreasing earnings and unstable liquidity. Whereas, works of Ali et'al (2023); Mazouz et'al (2023); Chijuka and Hussein (2023) evidenced higher liquidity reduces dividend payout.

Furthermore, a unit increase in tax rate reduces dividend to be paid significantly suggesting that if tax rate increases, dividend paid out will fall. The reason behind this is that when firms pay dividend, the investors would have to pay tax twice (both at dividend income level and in the shape of income tax). This result aligns with the tax preference theory.

Laslty, the robust GMM estimate confirmed that dividend payout policies of the sampled firms are factored by the ownership structure and that such influence is in the positive light. This result lay credence on the findings of Seatiawam, Bandi, Phila and Trinugroho (2016) evidencing that combine ownership (such as ownership concentration,institutional shareholdings and foreign shareholdings and managerial ownership) encourage firms to declare more dividend. However, Dutta (1999) reported that insider ownership structure reduces dividend payout. Following the submission made by Tnushi, Yahaya, and Agbi (2023), the decision to payout dividend though factor by ownership structure, however, both ownership structure and dividend payout both have mixed effect depending on the form of ownership. Evidently, they confirmed that while ownership concentration, institutional shareholdings and foreign shareholdings encourage firms to declare more dividends, managerial shareholdings dissuade firms from declaring more dividends.

6. CONCLUSION

The extant scholarly works reviewed evidenced that a significant portion of empirical research is dedicated to dividend payout predictors. However, the puzzling nature of dividend payout has created Vent for more works on the topic. Also, extant literature on dividend payout is replete and awash with contradictory findings on the topic. In fact, studies in Kuwait, Ghana, Turkey, Pakistan, Indonesia, Sri Lanka etc. all have contradictory findings on the topic. Again, there is a dearth of literature in oil and gas as it relates to topic. Most studies in topic are in sectors like manufacturing, conglomerates, the banking sector but there is paucity of literature on oil and gas firms. Consequently, this paper was meticulously designed to fill these identified gaps by combining the past dividend payout, profitability, leverage, growth opportunity, tax policy, liquidity, firm size and ownership structure to form a robust dividend payout model. The theoretical foundation of this research hinged on the Pecking order theory while the analytical technique was the Extended System GMM. Further, the data used for this analysis were sourced from the annual audited financial reports of the ten oil and gas from 2007 to 2022. The study evidenced that past dividend payout, profitability; growth opportunity and ownership structure are major positive drivers of dividend payout while higher tax policy and leverage reduce dividend payout. However, firm size has a minimal effect on dividend payout. Consequent upon the various discerned outcomes, the conclusion drawn is that dividend payout policy is factored by past dividend payout, profitability, leverage, growth opportunity, liquidity, tax policy and ownership structure.

7. POLICY IMPLICATIONS AND RECOMMENDATIONS

Examining dividend payout policy in the African context (especially in Nigeria) through the lens of past dividend payout, profitability, leverage, growth opportunity, liquidity, tax policy, firm size and ownership

structure portends high policy implications. Stated below, are the key policy considerations:

1. The paper submits that while policy makers of sampled firms are developing their dividend payout model, they should factor in past dividend payment into the model. This is rationalized on the ground that current dividends are mostly made out of accumulated profits and not out of accumulated cash.
2. The regulators guiding oil and gas firms in Nigeria must insist that sampled firms adhere with the legal restriction on the maximum dividend firms should pay when they declare huge profit. Also, they must as a matter of prominence, insist that the sampled firms pay out dividend from accumulated net profits realized without necessarily disrupting future development goals of the sampled firm.
3. Again, the regulators guiding oil and gas firms in Nigeria must as a matter of prominence are advised to factor in leverage while developing their dividend payout model. This is rationalized on the ground that the more levered a firm is, the lesser the tendency to pay dividend to equityholders.
4. The paper submits that when high growth opportunities are envisaged, the sampled firms should rather choose to use retained earnings as its major sources of financing in expanding new projects. The policy consideration here is built on the fact that both dividend payout and retention are factored by growth opportunities (firms' expansion plans).
5. The paper submits that before dividends are paid, the sampled firms as a matter of prominence are advised to ensure that they have surplus cash at their disposal or not. The major justification which surrounds this submission is that, a firm may accumulate huge retained profits/surplus but may not necessarily suggests that such firm has surplus retained cash.
6. The Nigerian government should give tax incentives to oil and gas multinational. This will enable them to meet other financial commitments to capital providers.
7. Though firm size is not a critical predictor of amount of dividend to be paid, the target firms are advised to invest in highly income generating ventures.
8. Since ownership structure is a key positive dividend policy driver, target firms are advised to structure their dividend policies to align with their ownership structure.

7.1. Contributions to Knowledge

The study contributed to extant body of knowledge by developing a robust dividend payout model that captures profitability, investment growth opportunities, low tax rate, optimal leverage, high liquidity and ownership structure as major predictors of dividend payout policies. Another area which the current study contributes to extant dividend policy studies lies on the need for dividend policy makers of sampled firms to factor in past dividend payment into their dividend payout model while developing such model. Similarly, the study contributes to extant studies by updating literature on the topic in the oil and gas sector. Hence, the current study extends its purview beyond the Nigerian context, thereby offering a more holistic and global view on firms desiring to determining a holistic dividend payout model.

7.2. Limitations and Future Research Directions

This kind of study is crucial since empirical research on the topic in the Nigerian context are few, and researchers in underdeveloped countries face several challenges. Notably, resolving these limitations may enable future studies to produce a more thorough understanding of the complexities underlying these problems, therefore offering scholars and policymakers a wider range of all-encompassing insights. Some of these noteworthy limitations and future research directions are as follows:

7.2.1. Limitations

i. *Data Sourcing Issues and Inconsistency in Reporting*: One major issue which researchers faced in developing country is data sourcing since most firms do not present their annual reports in their official websites. Even if some do, some firms may present only unaudited reports thereby making it difficult for researchers to cover a wide geographical coverage. To overcome the challenge posed by poor record keeping and inconsistency in reporting, the study was limited to the oil and gas industry. Since most of these oil and gas firms have international license, their data are readily available in their official websites for the public to download.

ii. *Methodological Issues*: One challenge which the researchers faced while crafting the methodology lies in the fact that developing a robust dividend payout model that addresses the need of diverse stakeholders needs high methodological intricacies. To overcome this challenge, the researchers, having consulted extant empirical literature used past dividend payout, profitability, leverage, growth opportunity, liquidity, tax policy, firm size and ownership structure to form a robust dividend payout. Another methodology issue which initially posed a major challenge lies on the degree profitability, leverage, growth opportunity; tax policy, firm size and ownership structure affect dividend payout. To overcome the challenge, correlation analysis was conducted alongside the Extended System GMM.

7.2.2. Future Research Directions

i. *Wider Geographical Coverage Analysis*: While this paper focuses on the oil and gas industry, future research may focus on the financial and non-financial sector. This is with the intent to have a more robust analysis.

ii. *Impact on Firm value*: Research on the dividend policy and firm value nexus can serve as a great opportunity for future investigation. This is with a view to re-evaluate the claims of both Gordon and Walter.

iii. *Inclusion of Control Variables*: Future researchers could include moderating variables such as inflation rate, interest rates, other firms' dividend payout ratio, earnings quality, shareholders' preference amongst others. The rationalization behind this is that beyond having a more robust dividend payout model, dividend payout policy is factored by multi-variables.

iii. *Stakeholder Need Analysis*: There is need for firms to conduct proper stakeholder analysis before crafting its investment decisions. Consequently, future researchers may decide to unravel the nexus between stakeholder need analysis and dividend payout policy.

Author Contributions:

All authors contributed equally to the research conceptualization, drafting, review, methodology, data sourcing, interpretation, conclusion, recommendations, proof reading and correction of this research.

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