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Dividend Decisions in US Oil & Gas: Insights from the Upstream Sector

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ABSTRACT

The purpose of this study is to analyse the determinants of dividend policy within the North American Oil and Gas (O&G) sector. Given the industry's critical role in the global energy landscape and its reputation for stable dividend payments, the research aims to identify the factors influencing dividend decisions and to examine the relevance of traditional dividend theories in this context. The study employs a panel data approach using a sample of 91 independent O&G companies operating in North America between 2006 and 2023. A random effects model is applied to assess the relationship between dividend payout ratios and explanatory variables, including Brent oil prices, risk, and leverage. The analysis also tests the applicability of life cycle, stakeholder, and free cash flow theories in explaining dividend behaviour within the sector. The empirical results show that Brent oil prices exert a positive and significant influence on dividend policies, confirming the industry's sensitivity to commodity price cycles. Traditional theories such as life cycle, stakeholder, and free cash flow models are validated for the first time in the North American O&G context. Conversely, risk and leverage exhibit a negative relationship with dividend payouts, underscoring the importance of financial stability in sustaining shareholder returns. This research contributes to the literature by providing one of the most comprehensive empirical assessments of dividend policy determinants in the North American O&G industry. It bridges theoretical perspectives with sector-specific realities, offering new evidence on how commodity prices and financial structure jointly shape dividend decisions. The findings offer valuable insights for investors, policymakers, and corporate managers seeking to optimize dividend strategies and anticipate payout behaviour in response to market dynamics.

Keywords: O&G Sector, Dividend Policy, Financial Performance
JEL Classifications: G32, G35, Q41

1. INTRODUCTION

Dividends represent the distribution of current and accumulated earnings to a company's shareholders in proportion to their ownership (Baker et al., 2007). Dividend policy is a strategy that affects a company's value, it is essential to understand the factors that explain dividend policy within companies in order to predict potential strategic actions (Dickens et al., 2003). Moreover, the analysis of dividend payout is a key activity, in that sense, authors like Buertey et al. (2024) have highlighted their connection with practices directly linked to society such as corporate social responsibility.

Maximizing shareholder wealth is one of the main goals of an organization, achievable by either increasing the company's market value or distributing profits through dividends or share repurchases (Yegon et al., 2014). In this way, dividends provide information about the organization, signaling its financial health stability, and future growth prospects to shareholders and the market. In that sense, a fair introduction of corporate disclosures and the advancement of financial markets can enhance investors' ability to make informed and effective decisions regarding whether to demand dividends from firms (Bilel and Mondher, 2021). Thus, dividend policy has been

considered as one of the most critical strategies to manage within companies.

Dividend policy has been identified as one of the ten unsolved puzzles in corporate finance (Idewele and Murad, 2019). Black (1976) described dividend policy as a puzzle that becomes more complex the more you examine it, a description that contemporary authors such as Zameer et al. (2013) and Taiwo et al. (2022) have emphasized, highlighting that dividend payout remains one of the great unsolved mysteries, despite the extensive efforts of previous literature to explain its behavior. Due to its complexity, it is expected that dividend policy is not motivated by a single goal (Brook et al., 1998).

The energy landscape has been widely considered from a financial perspective (Qi et al., 2024). Oil is one of the most widely used natural resources in the world, being one of the main drivers that has led to the implementation of the modern economy as it is known (Mohanty and Nandha, 2011). Oil and gas (O&G) sector plays a crucial role in the global economic framework (Alazzani and Nordin, 2013). Crude oil is one of the most transcendent resources in international markets as it has a strong power to influence economic crises or inflation, due to its indispensable nature for some sectors such as industrial, transportation, and agriculture (Hamilton, 1983). Today, the O&G sector plays a critical role in the daily lives of any citizen (Zsuzsa et al., 2023).

Due to the crucial nature of this sector, it is vital that companies within the O&G sector exhibit a certain degree of stability in their share prices, thereby reducing the risk of a global economic downturn. This risk reduction can be explained by a stable dividend policy that allows companies to become attractive assets for investors and shareholders to direct their funds towards the O&G sector. An ineffective dividend policy can result in a decrease in the market value of companies due to geopolitical risks, economic crises, or declines in the oil price (Ismayilov, 2020). Dividend distribution can therefore be an effective strategy to maintain a stable financial situation for the O&G sector. Recently, dividend policy has been the subject of debate.

Thus, it is essential to analyze how dividend policy impacts the O&G sector. This research examines the influence of market shocks, the Brent oil price, and various financial ratios on the dividend payout ratio. This approach enables the identification of key factors affecting investor decisions and proposes solutions or improvements to optimize the corporate financial performance.

Accordingly, this study is structured as follows: the first section includes the theoretical framework, providing insights into the relevance of dividends to the company and key variables analyzed in the study model. Next, the sample used and the methodology applied for the analysis are presented. The subsequent section discusses the results, followed by an analysis of these results in light of previously mentioned theories. Furthermore, conclusions and the implications of the research are outlined. Finally, future lines of research and the limitations encountered in the analysis are addressed.

2. THEORETICAL BACKGROUND

The value of a company is the estimated price at which it could be sold, reflecting what potential investors would be willing to pay. Several factors influence investors' assessment of a company's ability to increase its value, including Return on Assets (ROA), Debt-to-Assets Ratio (DAR), Current Ratio (CR), Firm Size, and Dividend Payout Ratio (DPR) (Husna and Satria, 2019). In this context, dividend payments have been a subject of debate in financial literature.

Dividend payments represent the return shareholders receive for investing in a company, whether in cash, in-kind dividends, or capital gains. Dividend policies involve managerial decisions on how much to pay, how much to retain for reinvestment, and the form of dividends that investors will receive (Muriungi and Mwangi, 2020). Thus, dividends are critical for investors, making dividend policy essential for companies to retain their shareholders. To achieve this, firms must improve their financial performance, particularly activity, liquidity, and profitability ratios (Arsyad et al., 2021).

There are several reasons why companies do or do not pay dividends, but understanding why they do and why investors value them remains a complex issue known as the "dividend puzzle" (Amidu and Abor, 2006). The influence of a company's dividend policy on its current stock price is a topic of great importance, both for corporate decision-makers who must set dividend policy, investors who design their portfolios, and economists who seek to understand and evaluate the functioning of capital markets (Miller and Modigliani, 1961). Since identifying the potential determinants of dividend payments is a difficult task for decision-makers (Yimer and Sharma, 2024). In order to provide an answer, academics and researchers have created various theoretical models that explain the factors that managers should take into account when deciding on dividend policy (Gill et al., 2010).

Considering that dividend policy is a strategy that affects a company's value, it is essential to understand the factors that explain dividend policy within companies in order to predict potential strategic actions (Dickens et al., 2003).

Miller and Modigliani (1961) introduced the Dividend Irrelevance Theory (DIT), which posits that dividend payments have no effect on a company's stock price. Accordingly, this theory asserts that the value of a firm and shareholder wealth are not influenced by the decision to pay or not pay dividends (Malik et al., 2013).

In contrast, Lintner (1956) argued that dividends are desirable because they help reduce the level of information asymmetry, as a company paying dividends assures investors of its sound performance. Similarly, Gordon (1962) considered dividends preferable to capital gains, reasoning that dividend payments reduce the risks associated with investments, as they are more secure. The "Bird-in-Hand" theory views investor risk as stemming from the reinvestment of earnings (Muriungi and Mwangi, 2020).

Therefore, it is crucial to continue analyzing the most representative variables in the O&G sector.

2.1. O&G Sector

The O&G sector is crucial for the overall energy landscape, providing the raw materials needed for several industries. Thus, over the years, various theories have emerged linking dividend payout to their impact on a company's image and financial performance. One of the most well-known is the signaling theory, which argues that companies can use dividend policy to send positive signals to the market so that investors and shareholders are attracted to invest in these companies (Bhattacharya, 1979).

The lifecycle of a company serves as a vital context for evaluating the usefulness of financial statement information (Black, 2003). In that sense, the life-cycle theory, which argues that companies in the growth stage tend to pay lower dividends, while more mature companies are more likely to pay dividends (Murhadi, 2010). This relationship is demonstrated by the seminal article published by Fama and French (2001). This behavior is also explained by the pecking order theory, suggesting that companies with greater growth opportunities will allocate a large portion of profits to their expansion, thus reducing the portion of profits that is distributed to shareholders (Higgins, 1981). Finally, it is worth noting the role played by the free cash flow model and the agency theory as contributions to the study of dividend policy. In particular, agency theory has been considered in depth by Alzayed et al. (2023). In addition to business risks, investors also encounter risks stemming from various agency issues that arise due to the differing objectives of entrepreneurs and investors (Ahmed and Aassouli, 2022). From the dividend standpoint, both approaches argue that a large portion of the free cash flow generated should be used to pay dividends to alleviate potential agency conflicts that may exist between management and shareholders (Jensen, 1986).

Due to the crucial nature of this industry, it is vital that companies within the O&G sector exhibit a certain degree of stability in their share prices, thereby reducing the risk of a global economic downturn. This risk reduction can be explained by a stable dividend policy that allows companies to become attractive assets for investors and shareholders to direct their funds towards the O&G sector.

The dividend policy for the O&G sector has been previously studied in the literature. For a sample of 77 O&G companies in Pakistan, Tahir and Mushtaq (2016) found that profitability and firm size had a positive relationship with dividend payout, while variables such as investment opportunities or liquidity showed a non-significant relationship. By raising dividend payments, companies may aim to strengthen their reputation and credibility among stakeholders, including investors (Saba, 2024). Others like Thirumagal and Vasantha (2018), found that tangibility and past dividend payout positively affected dividend policy for a set of 15 O&G companies in India. Other variables such as profitability and debt had a negative relationship. Similar results were found by Tijjani and Sani (2016) for 11 O&G companies in Nigeria between 2003-2014. A recent article also for the O&G sector in Nigeria revealed that profitability, firm size, and liquidity have a positive and significant relationship with dividend payout, while for variables confirmed by previous literature, such as debt or business risk, no significance was found in the relationship (Taiwo et al., 2022).

Crude oil plays a fundamental role in the development of the global economy and financial markets (Wong and Zhang, 2020). The relationship between oil prices and financial markets has significant implications for investors and shareholders (Cevik et al., 2020). In the case of the O&G sector, the oil price generate uncertainty in revenue (Hoque and Low, 2020). Therefore, understanding how changes in oil prices can affect this sector is a priority for making sound investment and corporate management decisions (Elyasiani et al., 2011). For example, according to the Upstream companies, the price risk exposure is higher compared to the rest of the companies within the O&G sector (Swaray and Salisu, 2018). Mohanty and Nandha (2011) found for the US O&G sector that Exploration and Oil Equipment Services companies had a higher oil price risk exposure than other companies at other levels of the value chain. According to Pruitt and Gitman (1991), risk is one of the primary determinants of dividend policy. Using beta, various authors such as Lloyd et al. (1985), and Collins et al. (1996) find that risk negatively impacts the ability to pay dividends. For the O&G sector in Pakistan, Tahir and Mushtaq (2016) confirm this relationship.

For this reason, it is considered relevant to study how the price can affect dividend policy in the O&G sector. In this way, the following hypothesis is analysed:

- H_1: An increase in the Brent oil price positively affects dividend payout ratio.
- H_2: Risk has positive impact on dividend payout ratio.

2.2. Market Shocks

The globalisation and internationalisation of the market means that there are shocks and unforeseen changes that affect securities markets. In particular, one of the key issues is how information is managed at such critical moments. Academics such as Banks et al. (2023) have highlighted the relationship between cash holdings and managerial political preferences, demonstrating that managers' political inclinations significantly impact firm risk and decision-making. Lower information asymmetries decrease the pressure on managers to demonstrate their commitment and communicate private information through costly dividend payments (Hail et al., 2014).

Income volatility is one of the determining factors for dividend policy (Pruitt and Gitman, 1991). Greater stability in revenue generation will provide companies with more opportunities to pay dividends. Then, during periods of lower macroeconomic volatility, companies tend to pay higher dividends (Alhassan, 2018). According to these results, it is expected that during periods of high volatility, such as the 2014-2016 period, the O&G sector will reduce its dividend payout ratio due to the high volatility in its revenues. Thus, existing evidence on the impact of oil price changes on stock market prices provides mixed and inconclusive results.

- H_3: During market shocks, the dividend payout ratio diminishes.

2.3. Financial Factors

Identifying the potential determinants of dividend policy is a difficult task for decision makers (Yimer and Sharma, 2024). Seminal articles such as Lintner (1956) and Fama and French (2001) suggest that the most relevant determinants of dividend payout are cash flow, earnings stability, profitability, investment opportunities, company maturity, and size. Other authors argue that debt (Cooper and Lambertides, 2018) and the company's life cycle (Brockman and Unlu, 2009) are also factors to consider to understand dividend policy. Risk, for example, is another variable that can negatively affect dividend payout (Collins et al., 1996). Academics like Tosun et al. (2023) point out that many companies learn financial survival through experience. These factors, among many others, have been applied to several sectors, with a particular interest for us in focusing on the O&G sector.

According to the signaling theory, a company may incur debt to pay dividends with the intention of conveying a positive image to the market. In this way, authors such as Chang and Rhee (1990) found a positive relationship between debt and dividend policy. Yousaf et al. (2014) and Kumari and Warne (2022) have been able to confirm this relationship for the O&G sector in Pakistan and India, respectively.

Companies with more available liquidity will tend to pay higher dividends. This relationship is supported by the signaling theory and the free cash flow theory (Ho, 2003). For the airlines sector, Kiraci (2021) confirms that if available cash is higher, the dividend payout increases. A similar relationship is found by Taiwo et al. (2022) for the O&G sector in Nigeria. Along with investment opportunities and company size, profitability has been considered one of the main factors driving companies to pay dividends (Fama and French, 2001). Yousaf et al. (2014) and Tahir and Mushtaq (2016) find a positive relationship between profitability and dividend payout for the O&G sector in Pakistan. Taiwo et al. (2022) suggests the same result for a set of 8 O&G companies in Nigeria. Accordingly, in order to investigate further whether certain financial variables are included in the dividend payout, the following hypotheses are put forward.

- H_4: The increase in leverage negatively affects the dividend payout ratio.
- H_5: Greater liquidity availability leads to an increase in dividend payout ratio.
- H_6: A positive ROE increases the dividend payout ratio.
- H_7: An increase in sales leads to an increase in the dividend payout ratio.

3. RESEARCH METHODOLOGY AND DESIGN

3.1. Sample

This study seeks to empirically investigate the primary financial and accounting determinants of dividend policy within the North American O&G sector. To this end, we examine a sample of 91 independent companies, selected based on data availability from a total of 248 potential candidates. The condition to selected our sample is that in at least 50% of the cases the company has paid dividends.

The data for this analysis were extracted from the Eikon Refinitiv by Thomson Reuters database, covering the period from 2006 to 2023, with a focus on the subperiods of heightened market volatility observed between 2014-2016 and 2020-2021 (Iglesias and Rivera-Alonso, 2022). Annual frequency data, as published by the companies at the end of each fiscal year, were utilized. To ensure data quality, the selection of variables and the inclusion of companies were contingent upon a maximum of 5% missing values. Outliers were winsorized at 1% and 99% to enhance the data fit for each company. Following these data treatments, the final sample encompassed 1,469 firm-year observations.

3.2. Measurement Variables

Table 1 presents the variables employed to achieve the research objectives. Most of the variables are financial in nature, consistent with prior studies in the O&G sector. Additionally, we incorporate macroeconomic variables specific to the O&G market, such as Brent oil price. Brent is the reference price for most international commercial agreements. Furthermore, the market shock variable has been introduced to control for the potential impact of periods of heightened volatility (2014-2016 and 2020-2021) on the dividend policy. Several control variables, including firm size and firm age, have been incorporated in alignment with previous literature.

3.3. Model and Statistical Approach

According to Hausman's test (P = 0.1958), it has been considered more appropriate to use the panel data through the random effects model, instead of the fixed effects model. The use of these approaches is widespread in previous literature due to the suitability of their use when trying to understand the performance of dividend payout ratio.

According to the statistical approach used and the variables employed, the panel data regression is as follows:

$$dpr = \beta_0 + \beta_1\, brent + \beta_2\, r + \beta_3\, sho + \beta_4\, lev + \beta_5\, liq + \beta_6\, roe + \beta_7\, rg + \beta_8 fs + \beta_9 fa + \varepsilon \quad (1)$$

Where, *dpr* = dividend payout ratio; *brent* = Brent oil price; *r* = risk; *sho* = market shock; *lev* = leverage; *liq* = liquidity; *roe* = return on equity; *rg* = revenue growth; *fs* = firm size; *fa* = firm age.

4. RESULTS

4.1. Preliminary Insights and Descriptive Statistics

A set of financial and macroeconomic variables can explain why some O&G companies decide to pay dividends and others do not in the North America. Before going in depth into the performance of these explanatory variables, it is necessary to present some preliminary figures that will help to understand the results extracted.

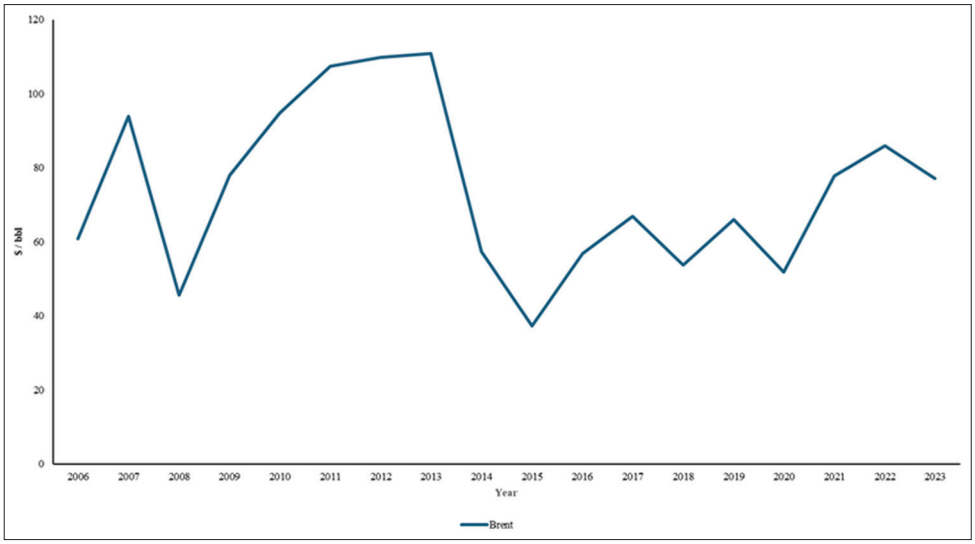
First, the Brent oil price performance from 2006 to 2023 is presented (Figure 1). Two major movements are observed, one of them the most abrupt occurs between 2014 and 2016. During that period a sharp 75% drop causes prices to touch historic lows since the beginning of the 21st century. Another strong movement occurs recently during the pandemic due to COVID-19. This time,

Table 1: Measurement variables

Variable	Type of variable	Dimension	Formula	Description	References	Hypothesis
Dividend payout ratio *(dpr)*	Dependent	Finance	dpr=tcdp⁄ni	Total cash dividends paid divided by net income after taxes.	Issa (2015); Ezeh-Ugochi et al. (2022).	
Brent oil price *(brent)*	Independent	Macro	None	Brent crude oil price ($/bbl.)	Yang et al. (2023).	H_1^+
Risk *(r)*	Independent	Finance	$r=SD\ (R_{i,t})$	Standard deviation of firm's stock return over a year using monthly observations.	Akhtar (2018).	H_2^+
Market shock *(sho)*	Control	Macro	None	Binary variable that takes the value of 1 if the period is within global shock period, and 0 otherwise	Iglesias and Rivera-Alonso (2022).	H_3^-
Leverage *(lev)*	Independent	Finance	$lev = d/e$	Total debt divided by total equity.	Kanwal et al. (2017); Kusuma et al. (2018).	H_4^-
Liquidity *(liq)*	Independent	Finance	$liq = ca/cl$	Current assets divided by current liabilities.	Kiraci (2021); Kumari and Warne (2022); Taiwo et al. (2022).	H_5^+
Return on equity *(roe)*	Independent	Finance	$roe = np/e$	Net profit dividend by total equity.	Ezeh-Ugochi et al. (2022); Shaddady (2023).	H_6^+
Revenue growth *(rg)*	Independent	Finance	$rg = r_t - r_{t-1}/r_{t-1}$	Percentage change in revenue from year to year.	Kanwal et al. (2017); Elyasiani et al. (2019); Rifat et al. (2020).	H_7^+

Own elaboration

Figure 1: Brent oil price



the movement is upward with a considerable rise between 2020 and 2022. These two trends are controlled in our study through the market shock variable to know if it significantly affected dividend policy within US O&G companies.

Thanks to Figure 2, we can analyze the O&G production and consumption performance worldwide. Focusing on the North American region, we can observe that it is the second most important oil producing and consuming region, only behind Middle East (O&G production) and Asia Pacific (O&G consumption). If we focus on Figure 2a, we can see how O&G production increased considerably in North America since 2011, reaching record highs last year, being very close to the production levels in Middle East. This sharp rise is due to the shale boom and fracking technology for crude oil extraction. On the other hand, Figure 2b clearly identifies the upward trend of Asia Pacific in the O&G consumption, being the fastest growing region in this area. Although far behind Asia Pacific, North America is the second largest O&G market. It is also worth noting that Europe is the region with the biggest drop in O&G consumption worldwide so far.

Finally, Figure 3 presents the evolution of the dividend policy in the study sample. It is observed that the maximum during the period is in 2011 (114.05%) coinciding with the shale boom in the United States. Another interesting issue is during the fall in oil prices in the period 2015-2017. Even presenting negative results, companies continued to pay dividends to their shareholders. After this period, there is a rebound that tends to decrease from 2020, the year in which the Covid-19 pandemic begins. During 2023, there was a new rebound mainly due to the record results presented

by the companies after the period of inflation and price increases caused by the war between Russia and Ukraine.

Table 2 shows the descriptive statistics. With an average return on equity value of 410.46%, this is a considerably profitable industry, but also volatile as can be seen in the risk variable with a standard deviation of firm's stock return of 7.06. As is well known, companies in the O&G sector have a very direct relationship with the oil price performance. Variables such as revenue growth (12.79) indicates that during the study period the companies have increased their sales, partly due to the trend of the reference price for certain years. The average leverage is 288.15%, which means that these companies are considerably indebted. However, the liquidity ratio is 274.51. Also, it is a mature industry with an average firm age of 39.52. Finally, note the high volatility of Brent with a standard deviation of around 22.

4.2. Multivariate Analysis

Table 3 presents the results extracted from the analysis. Considering the *Wald* Chi-square value (1,253.65) and their

Figure 2: (a and b) O&G production and consumption by region

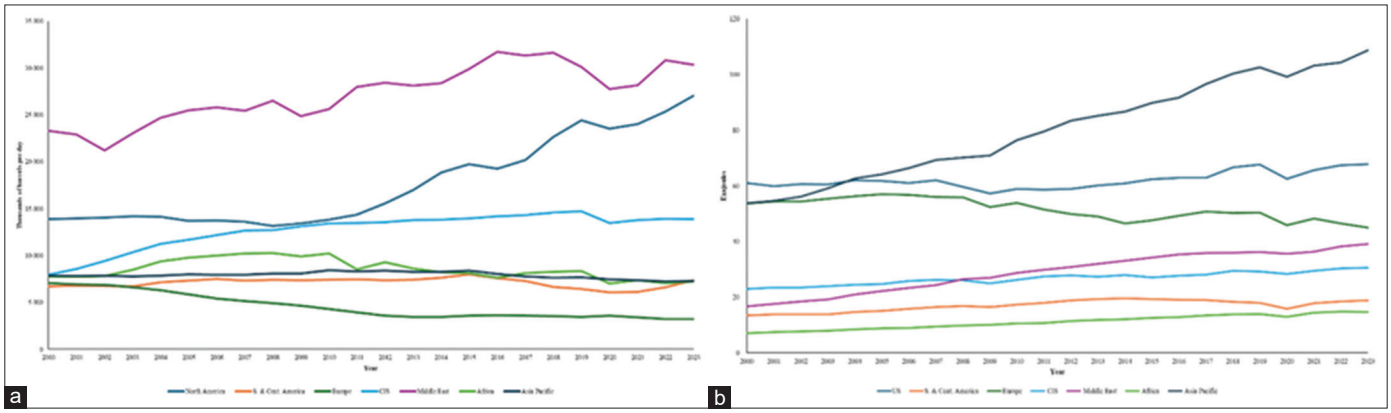


Figure 3: Dividend payout ratio trend

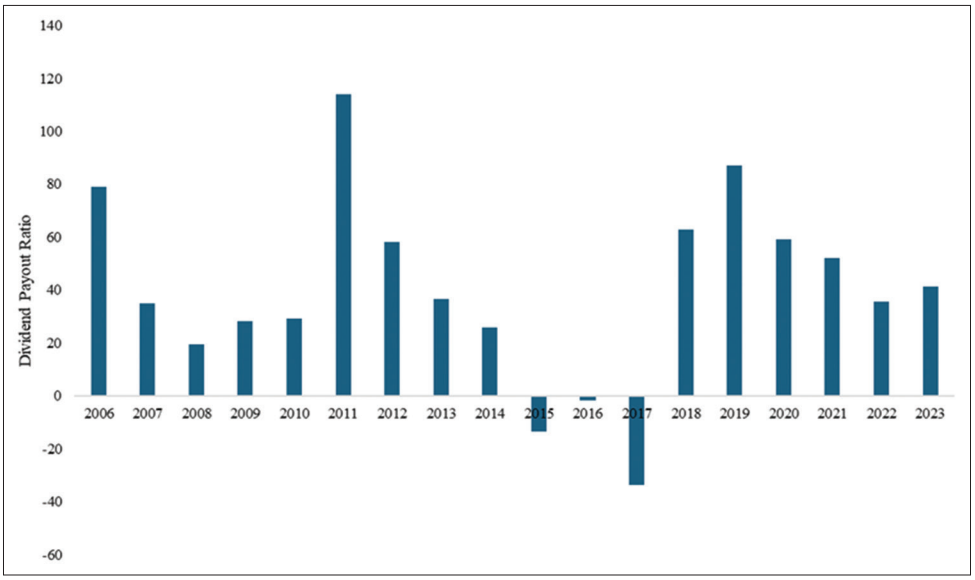


Table 2: Descriptive statistics

Variable	*n*	$\bar{X}$	*SD*	σ^2	*S*	*K*	P_{25}	P_{50}	P_{75}
Brent oil price *(brent)*	1469	73.98	21.96	482.43	0.25	1.95	56.82	71.95	93.85
Risk *(r)*	1469	11.86	7.06	49.83	1.68	5.90	7.03	9.99	14.29
Leverage *(lev)*	1469	288.15	8879.32	7.88	40.81	1699.22	10.82	42.04	93.91
Liquidity *(liq)*	1469	274.51	596.42	355715.1	5.19	30.48	90.03	132.28	219.07
Return on equity *(roe)*	1469	410.46	2869.37	8233310	9.41	99.04	1.34	11.49	22.55
Revenue growth *(rg)*	1469	12.79	46.18	2132.44	1.95	10.50	-14.63	7.65	31.38
Firm age *(fa)*	1469	39.52	31.27	978.05	1.50	4.51	19	28	50
Firm size *(fs)*	1469	20.83	2.73	7.44	-0.42	2.84	19.01	20.97	23.05

The analysis was performed using Stata software version 15.1 according to the data provided by the Eikon Refinitiv by Thomson Reuters database. *n* is the number of observations. $\bar{X}$ is the mean. *SD* is the standard deviation. σ^2 is the variance. *S* is the Skewness. *K* is the Kurtosis. P_{25} is the percentile at 25%. P_{50} is the percentile at 50%. P_{75} is the percentile at 75%

Table 3: Random effects regression results

Random-effects GLS regression						Number of obs=1,469
R^2=0.2513						Number of companies=91
Hausman test for random effects						Wald Chi-square=1,253.65
Chi-square=11.11|Prob > Chi-square=0.1958						Prob > Chi-square=0.0000
Dividend payout ratio *(dpr)*	**Coefficient**	**Standard error**	**Z**	**P > |z|**	**95% Confidence Interval**	**Accepted/Rejected hypothesis**
Brent oil price *(brent)*	0.4116	0.4700	7.88	0.000***	0.0015	0.0031	H_1 is accepted
Risk *(r)*	0.5309	1.5295	8.35	0.001***	0.46684	2.5286	H_2 is accepted
Market shocks *(sho)*	−15.9724	21.6531	−1.96	0.061*	−0.0033	0.1247	H_3 is accepted
Leverage *(lev)*	−0.0002	0.0010	−0.22	0.825^{ns}	−0.0022	0.0017	H_4 is rejected
Liquidity *(liq)*	0.0010	0.0188	7.56	0.002**	0.3581	0.7380	H_5 is accepted
Return on equity *(roe)*	0.0027	0.0041	9.64	0.000***	0.0054	0.5107	H_6 is accepted
Revenue growth *(rg)*	0.6536	0.2030	0.32	0.347^{ns}	−0.3323	0.4631	H_7 is rejected
Firm age *(fa)*	0.1661	0.3287	8.34	0.000***	0.0814	0.1781	
Firm size *(fs)*	0.8743	4.3611	1.20	0.077*	−0.6732	0.0422	

The results of the random effects regression of the variables analyzed are presented in Table 3. The analysis was performed using Stata software version 15.1 according to the data provided by the Eikon Refinitiv by Thomson Reuters database. *, **, ***refer to statistical significance levels at 10%, 5% and 1%, respectively. ^{ns}Refers to the non-significance of the variable

significance at 1%, we can conclude that the model is significant overall. The Hausman test indicates that we should use the random effect model, considering that the *Prob* > Chi-square is greater than P-value (0.1958). The overall R^2 shows a value of 25.13%. This indicates that 25% of the variation in the dividend payout ratio is explained by the independent variables selected within the study sample.

In line with the baseline hypotheses, 5 of the 7 hypotheses are accepted in the model. Risk (0.5309***), as measured by the standard deviation of firm's stock return, significantly increase the dividend payout ratio. The free cash flow model is confirmed by the fact that the liquidity is positive and significant (0.0010**). Hypothesis 6 is also accepted, so that a more profitable company tends to pay out more dividends than others with lower profitability. This is demonstrated by the result extracted from the Return on Equity (0.0027***). According to the results extracted from the leverage variable (−0.0002^{ns}), companies with high indebtedness may slightly reduce their dividend payout ratio. However, this result does not support the starting hypothesis number 4 because it has no statistical significance. Also, as the company is larger in terms of assets and is more mature, the dividend payout ratio is higher according to the firm size and firm age (0.8743*; 0.1661***, respectively). Finally, revenue growth is positive but not significant for the study sample (0.6536^{ns}).

As for macroeconomic variables, Brent oil price positively and significantly affects dividend payout in North American O&G companies (0.4114***). Also, note that periods of high volatility negatively affect dividend payout ratio (−15.9724*). This result may be due to the sharp drop suffered during the 2014-2016 period.

5. DISCUSSION

The O&G sector, where companies invest large amounts of money to carry out exploration, extraction and production projects, processes that require fixed assets which represent a considerably high investment. Brent oil price have a significant impact on the sample, thus confirming that the dividend policy in the North American O&G sector is sensitive to the oil price, validating hypothesis 1. Academics such as, Alhassan (2018) emphasizes the sensitivity of dividend policies to oil price volatility.

Regarding the second hypothesis, authors such as Pruitt and Gitman (1991) find that risk is a major determinant of firms' dividend policy. In this study, standard deviation of firm's stock return has a positive relationship with respect to the dividend payout ratio. This is in line with hypothesis H_2, in that sense this hypothesis has been validated. Seminal articles such as Lloyd et al. (1985), and Collins et al. (1996) found a significantly negative relationship between beta and dividend payout. For the O&G industry in Pakistan, Tahir and Mushtaq (2016) find that business risk is one of the variables that negatively affect dividend payout. In this case, risk has a positive impact, as companies can use dividend policy as a strategy to retain and attract more shareholders, despite external volatility caused by geopolitical, economic or market events. Moreover, it is proved that there is a relationship between variables, however, taking into account the selected sample, hypothesis 3 can be validated. Thus, the payout ratio can diminishes in situations of market shocks.

Authors such as Chang and Rhee (1990) found a positive relationship between leverage and dividend policy, suggesting that companies borrow to pay dividends and transmitting a positive signal to investors. Yousaf et al. (2014) find the same relationship for the O&G industry in Pakistan. For the same industry in India, Kumari and Warne (2022) note that leverage reduces dividend payments but not significantly. However, taking into account the analysis, it cannot be accepted that increasing leverage negatively affects the dividend payout ratio. In that sense, Hypothesis 4 is rejected.

Although authors such as Tahir and Mushtaq (2016) found that variables such as investment opportunities or liquidity showed a non-significant relationship. In this analysis, Hypothesis 5 is confirmed, therefore, greater liquidity availability leads to an increase in dividend payout ratio.

The Return on Equity has been considered, together with the cash-generating capacity and the dividend policy, as three fundamental pillars that the company must take into consideration for correct management of funds (Black, 1976). For the North American O&G sector, the Return on Equity is positively related to the dividend payout ratio. A company with a higher Return on Equity will have more capacity to pay dividends. In accordance with the results

obtained, hypothesis H6 is accepted. Kanwal et al. (2017) found no significant relationship between sales growth and dividend payout in a sample of O&G firms in Pakistan. In this context, the results indicate that an increase in sales does not necessarily lead to an increase in the dividend payout ratio. Consequently, hypothesis 7 is rejected.

6. CONCLUSIONS

Dividend policy will indicate the excess profits available for distribution at the end of the fiscal year, which is often interpreted as a positive signal to the market, reflecting the company's strong profit-generating capacity. For this reason, this topic has been extensively studied; however, due to its inherent complexity, unresolved issues persist regarding the precise relationship between dividend payout and financial performance.

Dividend payout is a crucial factor in investor decision-making and company valuation. They often indicate financial health and stability, which influences investor confidence and market perceptions. The main financial and accounting determinants of dividend policy in the North American O&G sector are investigated. A sample of 91 independent O&G companies from 2006 to 2023 is examined.

The analysis reveals that both Brent oil price significantly influence dividend policy within the sector. Notably, Moreover, periods of market shocks are found to negatively affect the dividend payout ratio, underscoring the potential for a significant reduction in dividend-paying companies during economic and financial crises. Regarding financial and accounting variables, several key theories, including life cycle, stakeholder, and free cash flow theories, are confirmed for the first time in the context of North American O&G companies. Additionally, factors such as risk and liquidity are shown to have a positive influence on dividend policy. These findings contribute to the ongoing theoretical debate surrounding the determinants of dividend payout. The conclusions drawn from this study equip investors and shareholders with the tools to make informed investment decisions by focusing on the key factors that enhance the likelihood of dividend payments.

6.1. Implications

This research contributes to the theoretical understanding of dividend policy by highlighting the complex relationship between dividend payout and its factors in the O&G companies. Thus, it enables an understanding of the key factors driving these companies to adjust their dividend payout policies. It challenges existing theories by revealing how different factors, such as oil price fluctuations, can have divergent effects on dividend policy. The study underscores the importance of integrating sector-specific factors into theoretical frameworks, particularly for industries with significant commodity exposure, like the O&G sector. This insight into the determinants of dividend policy enriches theoretical discourse and provides a foundation for future research.

From a practical point, the results of this investigation provides valuable insights for investors and shareholders by clarifying how dividend policy reflects a company's financial health and profit-generating capacity. In that sense, these results offer critical guidance for managers in formulating and adjusting dividend policies. Understanding the determinants of dividend payout helps investors make more informed decisions, aligning their expectations with the company's financial strategies. Shareholders can use this knowledge to assess whether a company's dividend policy signals robust financial performance and stability.

The findings can guide both investors and shareholders in evaluating the effectiveness of a company's dividend strategy in enhancing shareholder value and ensuring long-term returns. By integrating these insights, companies can better anticipate and respond to external factors that impact their ability to pay dividends, ensuring that their dividend policies reflect both shareholder expectations and company performance.

6.2. Limitations and Future Research Lines

This study is not without limitations. While it considers a wide range of variables, it does not account for all potential factors influencing dividend policy, such as macroeconomic factors or fiscal and regulatory policies. Additionally, dividend policies can be influenced by changes in sector regulations and economic conditions within the territory and industry. Finally, it is important to note that unforeseen events, such as natural disasters, pandemics, or economic crises, can significantly affect the results and the ability of companies to pay dividends.

The ongoing debate about the optimal dividend policy highlights the "puzzle" of how dividends impact stock prices and company performance. This unresolved issue suggests a need for further research to fully understand the complex relationship between dividend payout and financial outcomes. Moreover, the energy sector requires ongoing and detailed research. Variable regulations across different regions and market dynamics are key factors that can influence dividend conditions. It is crucial to explore and compare how dividend policies differ across territories, examining how risk factors and growth opportunities evolve over time and impact dividend policies, with particular attention to emerging trends and long-term changes in the industry. Additionally, understanding investor behavior and the variables affecting their decisions is fundamental. Analyzing platforms and investor groups that feature user-generated content (UGC) can provide valuable insights into how these interactions and content influence investment decisions.

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