IMPACT OF INDUSTRY SPECIFIC VARIABLES ON THE DIVIDEND POLICY OF OIL AND GAS SECTOR IN PAKISTAN

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Abstract

Dividends act as a pathway to attract investments and petroleum industry of Pakistan has remained an important element in economic progress. Therefore, this research investigates the impact of corporate tax, financial leverage and sales growth on dividend payout ratio of oil & gas sector companies in Pakistan. Secondary data of 10 companies for 12 years have been incorporated. Hypotheses have been tested using fixed effects regression technique which was confirmed through Hausman specification test. Empirical findings reveal that corporate tax and sales growth have insignificant positive impacts, whereas financial leverage has an insignificant negative impact on the dividend payout ratio. The study concludes that decisions about dividend payouts should be made by considering other variables.

Keywords: Dividend policy, corporate tax, financial leverage, growth opportunities, fixed effects regression, oil & gas sector

JEL Classification: Q 300

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Introduction

Dividend policy has been a widely discussed issue for stockholders of a company because dividends attract shareholders and generate investments (Barclay et al., 1995). Dividend is the portion of a company’s earning that is given to a class of its shareholders in the form of cash, stock or property. They are paid to maintain the existing owners and portray a sound financial image (Dividend, 2015). Correspondingly, decision to retain or payout profits is called dividend policy (Tajirian, 1997). In today’s dynamic business environment companies take decisions to manage financial crisis. One way is to adjust dividend pay-outs to the shareholders, as it is believed to be a shock absorber (Gupta & Banga, 2010)

However, during financial instability of an organization, the trend of paying dividends is unrestricted and few companies drastically decrease their dividend pay-outs while others all together increase the dividends (Hellström & Inagambaev, 2012). At the same time, a lack of this policy or its expression without other liquidity options is a serious mistake. It is further noted that investors who prefer short term earnings invest in companies with greater dividend payout ratio. Likewise, established, stable companies mostly possess higher dividend payouts and growing firms wish to have lower ratios (Lintner, 1956). However, this is not recommended, because paying out higher challenges the sustainability (Dividend payout ratio, 2016).

Oil & Gas Sector in Pakistan

Over the past half century, petroleum industry has played a major part in national progress by creating great indigenous gas discoveries (Investment opportunities in Pakistan’s upstream oil and gas sector, 2012) and since 1947, Oil & Gas sector has faced phenomenal growth. Moreover, the dividend yield ratio of Pakistani oil and gas sector has shown a great variation over last decade, where the overall dividend payouts started to decrease in early 2000s and significantly improved in year 2008 onwards. In start, there was no gas production and only scarce oil quantities were produced. Pakistan’s first oil field was discovered in late 1952 near a giant gas field at Sui. Later in 1960s the Toot oil field was established in Islamabad and production gradually increased thereafter. Statistics
available on (Asia Trade Hub, 2014) show that in Pakistan, one sixth of the oil requirements are met by daily production of 60,000 barrels, whereas, remaining amount is imported at a cost of around $2.5 billion. However, high demand of oil as well as gas usage in industrial or domestic power sector has failed to meet the necessary infrastructure to cope with increasing volumes of imports, and a substantial amount of investment is needed to support the infrastructure.

Furthermore, a decline in the country’s production has led the costs to rise and stay increasing. Apart from other factors, rising costs as a result have also played their part in the increased prices of oil exclusive of the enhancement in income, which adversely impacts the transportation budget of public (Asia Trade Hub, 2014). In this regard, conventional wisdom suggests proper management of dividend policy, because it in turns affects the share prices and shareholder wealth (Asia Trade Hub, 2014). This is why a sound dividend policy of this sector can be of vital importance in economic progress (Asia Trade Hub, 2014).

**Significance of study**

Although, most companies practice a standard procedure for payouts to shareholders, a number of researchers conclude that there are differences in the impact of considered factors on dividend payout trend for each country. For instance, Rozeff (1982) investigated a strong negative relationship between riskiness and dividend payouts in the U.S.A. However, Hellström & Inagambaev (2012) reveal positive relationship between same variables in the United Kingdom.

In the context of Pakistan, (Gul et al., 2012; Rafique, 2012) have observed variables affecting dividend policy of banks and other companies listed on Lahore Stock Exchange (LSE), Karachi Stock Exchange (KSE), or Islamabad Stock Exchange (ISE). However, there is a gap in literature, where rare work has been carried out with respect to other sectors in Pakistan and picture of dividend policy which is available is still incomplete. Thus, it is imperative to examine that how the policy to allocate dividends is resolute in a growing economy. Furthermore, which firm specific, industry specific or macroeconomic factors play their part in establishing the dividend policy of oil and...
gas sector in Pakistan. This forms the basis for research objectives of present study. It extends the existing literature by examining the impact of most frequently used variables; corporate taxes, financial leverage and sales growth (Afza and Mirza, 2010; Rafique, 2012) on dividend payouts of Oil & Gas sector in Pakistan. This study further compares the selected variables and proves their importance in sequence contributing to dividend policy.

Corporate taxes are the financial charges against profits earned by businesses during a given taxable period (Corporation Tax, 2016). They raise a substantial amount of revenue for government (Hungerford, 2013), advance the economic competitiveness, and improve company's profitability to strive in both domestic as well as overseas markets (Corporate Tax: Discussion paper options for reform, 2011). At present, 35% of profits have been paid as corporate taxes in oil and gas sector of Pakistan (Pakistan Corporate Tax Rate, 2015).

Secondly, financial leverage represents use of debt to acquire additional assets (Averkamp, 2016). It allows investors to earn long term profit from purchases. Well managed leverage increases equity and operating income. With a rising operating profit, high financial risk insures maximum utilization of capital and fixed assets in order to increase the profitability of a firm (Account-Management, 2016). Finally, growth in sales of a business determines its financial stability to reinvest its profits and sales are a major tool verify a company’s growth (John and Muthusamy, 2010).

**Literature Review**

Over the years, a number of local (Afza and Mirza, 2010; Rafique, 2012) and foreign researchers (Anand, 2004; John and Muthusamy, 2010; Mehta, 2012) have examined the impact of factors such as Growth (Rozef, 1982), tax (Singhania, 2006), and leverage (Amidu, 2007) on dividend decisions of organizations in multiple industries of an economy. Initially, Rozef (1982) used cross-sectional and regression model to analyse the effect of growth on dividend pay-out ratio of 64 different companies. Results showed a significant effect. Contrarily, Abrutyn and Turner (1990) observed pay-out ratio of dividend in comparison with capital gain and taxes. Outcome
concluded an unlike behaviour for different firms. Furthermore, Gul (1991) demonstrated that if firm size and profitability are controlled, growth opportunities inversely affect dividend yields. Barclay et al. (1995) prove that more intensive the investment opportunities (comparative to the size of the company) are less is the company’s leverage ratio and dividend yield. Moreover, Anand (2004) studied the relation of growth and market value with dividend policy of 525 firms Listed on Indian Stock Exchange and reveal a direct relationship between all variables.

Likewise, Abdullah et al. (2005) analysed that size and growth exert significantly positive influence on dividend pay-out whereas, leverage show inverse relationship for companies listed on Main Board of Bursa Malaysia. Similar results have been provided by (Rafique 2012; Amidu, 2007; Al-Malkawi, 2008; Al-Kuwari, 2009; Asif et al., 2011; Afza & Mirza, 2010; Rehman and Takumi, 2012; Naz et al., 2013). Contrarily, Roomi et al. (2011) determine negative impact of growth on the dividend policy. According to Singhania (2006) tax has a significant effect on the dividend pay-out ratio of 590 Indian companies from the period 1992-2004. However, Gul et al. (2012) proved a positive but statistically insignificant relationship. In this regard, Gill et al. (2010) suggest that positivity and negativity of relationship between growth opportunities, tax, financial leverage and dividend policy varies from one industry to another.

With respect to studies in UAE, (Mehta, 2012) ascertains that risk and size are two most important concerns in choosing dividend policy by UAE companies. Moreover, Kivale (2013) reveals a negative association between revenue growth, financial leverage and dividend pay-out. Research on Malaysian industrial products sector justifies that investment opportunities, risk and profitability play significant role in determining dividend decisions (Ardestani et al. 2013). In the same way, Uwuigbe and Olusegun (2012) concluded that a variation in corporate income tax rate would meaningfully affect the dividend policies of the companies working in Nigeria. Likewise, Emamalizadeh & Ahmadi (2013) inspect an insignificant positive influence of debt ratio on dividend per share of food companies in Tehran. In addition, Malik et al. (2013) examine that company’s profitability, size and earnings per share increase the possibility of KSE listed firms to pay...
diveid, while growth opportunities reduce the probability to pay dividends.

**Corporate Tax and dividend policy**

According to Rehman and Takumi (2012) relationship of corporate tax with dividend payout ratio is positive in case of KSE 100 index companies. This result is also supported by (Amidu and Abor, 2006; Masulis & Trueman, 1998). However, according to Gill et al. (2010) there is a positive association between dividend payout ratio and corporate Tax in US manufacturing sector, but negative impact in services sector. Same outcome has been reported by Rafique (2012). Furthermore, Uwuigbe and Olusegun (2012) suggests that variation in corporate income tax rate would meaningfully impact the dividend policies of the companies working in Nigeria. Therefore, tax can positively as well as negatively influence the dividend policy of any organization. Thus, first hypothesis of this research is formulated as:

\[ H_1: \text{Corporate tax has a significant positive impact on the dividend policy of Oil and Gas sector companies in Pakistan.} \]

**Financial Leverage and dividend policy**

A number of studies have found that financial leverage has negative impact on dividend policy. This notion is supported by (Osegbue et al. 2014) who state that a firm with high debt financing faces challenges of fixed financial charges as principle amount and interest payments. This is because firms want to maintain creditors rather than distributing the cash to shareholders. Al Kuwari (2009) and Al-Malkawi, (2007) also find a negative relationship between the two. However, Mollah et al. (2002) examined an emerging market of UAE and found a positive association between financial leverage and debt-burden level, which increases the transaction costs. Furthermore, Rafique (2012) affirms that with high transaction costs, firms are in weak position to pay higher dividends. While majority of literature provides justifications for negative impact of leverage, a few studies prove its direct affect. In conclusion, the third hypothesis of this research is constructed as:
H$_2$: Financial leverage has a significant negative impact on the dividend policy of Oil and Gas sector companies in Pakistan.

Sales Growth and dividend policy

Literature review provides multiple explanations for the impact of growth opportunities on dividend policy. Several studies reveal sales growth rate as commonly used alternative variable for growth opportunities (Rozeff, 1982; Mohd et al., 1995; Al-Kuwari, 2009). In this regard, Higgins (1972) proves that dividend payout ratio is indirectly related to a firm’s need for finance growth opportunities. Ahmed and Javid (2012) state that firm with more growth opportunities pays fewer dividends. According to Al-Kuwari (2009) firms with greater growth opportunities tend to use internal funding sources to finance projects. Malik et al. (2013) also come to the same conclusion that growth opportunities decrease with paying more dividends. However, Anand (2004) show a positive relationship between growth and dividend policy decisions. Conclusively, it the growth in company’s sales can increase the dividends paid and can also decrease if management considers reinvesting them in company. Therefore, second hypothesis for this research is developed as:

H$_3$: Growth opportunities have a significant positive impact on the dividend policy of Oil and Gas sector companies in Pakistan.

Method

Variables

The measures of dependent variable and independent variables which we have selected for this research are given in Table 1.
Variables and their assessment

<table>
<thead>
<tr>
<th>Variables</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variable</strong></td>
<td></td>
</tr>
<tr>
<td>Dividend Policy (Pay-out Ratio)</td>
<td>Dividends Paid / Net Income</td>
</tr>
<tr>
<td><strong>Independent Variables</strong></td>
<td></td>
</tr>
<tr>
<td>Corporate Tax</td>
<td>(Tax Paid / Profit Before Tax) x 100</td>
</tr>
<tr>
<td>Financial Leverage</td>
<td>Total Debt / Total Equity</td>
</tr>
<tr>
<td>Sales Growth</td>
<td>(Current sales – Previous Sales) / Previous Sales</td>
</tr>
<tr>
<td><strong>Sample and Source of Data</strong></td>
<td></td>
</tr>
</tbody>
</table>

12 years (2002-2013) balanced panel data of ten out of total 17 Oil & Gas sector companies have been collected through secondary sources. The excluded 7 companies were either newly established, did not have unconsolidated financial statements from 2002 onwards or their required financial data was not available for a longer time period.

**Analysis Technique**

In order to investigate the relationship and impact of observed variables, we incorporated Pearson correlation and multiple regression technique. Therefore, this research has utilized MS Excel, SPSS and STATA software to examine the descriptive statistics, calculate correlation, merge data sets, check for merge errors, and to apply Hausman specification test in order to identify which of the two regression techniques should be applied.

**Results and Discussion**

**Descriptive Statistics**

The mean, standard deviation, variance, range, minimum and maximum values of selected dependent and independent variables are given in Table 2. The mean value of cash dividend pay-out ratio
indicates that on average 79.5% of EPS (earning per share) by oil and gas companies is paid to stock holders in return of capital. On average, capital structure constitutes of 78% debt and 22% equity. Moreover, sales grew by 12% during 2002-2013. Standard deviation coefficients show variation because of the variability in sizes of firms.

Maximum values show that several companies paid high dividends. Conversely, a number of companies either did not pay any dividend or opted to pay in form of stock and stock split. At maximum 81.5% tax has been charged to the firms during 12 year-time period and benefit has been enjoyed by few companies. The maximum and minimum values of financial leverage point out that in some time period companies have greatly relied on debt financing, whereas contrarily they have also shifted the capital structure to larger portion of equity financing.

Table 2

Descriptive statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Sample Variance</th>
<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dividend Pay-out Ratio</td>
<td>79.54</td>
<td>96.95</td>
<td>9401.06</td>
<td>525</td>
<td>0</td>
<td>525</td>
<td>9545</td>
</tr>
<tr>
<td>Corporate Tax</td>
<td>34.21</td>
<td>15.43</td>
<td>238</td>
<td>81.5</td>
<td>0</td>
<td>81.5</td>
<td>4105</td>
</tr>
<tr>
<td>Financial Leverage</td>
<td>3.622</td>
<td>4.55</td>
<td>20.78</td>
<td>36.5</td>
<td>0.26</td>
<td>36.52</td>
<td>434.67</td>
</tr>
<tr>
<td>Sales Growth</td>
<td>12.784</td>
<td>14.743</td>
<td>217.38</td>
<td>72.69</td>
<td>-27.59</td>
<td>45.10</td>
<td>1534.10</td>
</tr>
</tbody>
</table>

Correlation

The association and relationship between variables has been analysed using Pearson correlationas recommended by (Al-Kuwari, 2009; Gul et al.,2012; Gill et al., 2010). The correlation coefficients of dividend pay-out ratio, financial leverage, corporate tax and sales growth are given in the Table3.
The correlation coefficients show that by keeping all other factors constant, cash dividend has a weak negative correlation with tax rate, a weak positive correlation with growth opportunities, and moderate negative correlation with financial leverage. Moreover, coefficients of correlation among independent variables signify a weak correlation. However, no correlation coefficient is greater than 0.7, which verifies the absence of multi collinearity in this research (Hellström & Inagambaev, 2012).

Regression Analysis

Based upon recommendations of Joseph (2010), fixed and random effects regression models have been applied to the panel data of this study. Furthermore, Hausman specification testor \( m \)-statistic has been applied to authenticate the suitable methodology and to choose between the two models. Results of \( m \)-statistic applied using STATA software are illustrated in Table 4 given below. It justifies the application of fixed effects regression model in the scenario of our research with a Prob> chi\(^2\) = 0.0302 (Princeton University Library, 2007).

Furthermore, fixed effects regression equation developed for this research is as follow:

\[
Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \mu_{it} __________ (1)
\]

Where; \( Y_{it} = \) Cash Dividend Pay-Out Ratio, \( X_{1it} = \) Corporate Tax Rate, \( X_{2it} = \) Financial Leverage, \( X_{3it} = \) Sales Growth Percentage, \( \beta_0 = \) Value of x-intercept which is constant, \( \beta_1, \beta_2 \& \beta_3 = \) Proportionate
change in dependent variable (dividend payout ratio) due to independent variables (corporate tax, financial leverage, sales growth), i = 1 to 10 Oil & Gas Sector Companies that are selected, t = Years 2002 -2013, and µit = error term

Table 4
Hausman Specification test

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>Difference</th>
<th>Square root</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fixed</td>
<td>Random</td>
<td>(Fixed-Random)</td>
</tr>
<tr>
<td>Corporate tax</td>
<td>0.063</td>
<td>-0.011</td>
<td>0.075</td>
</tr>
<tr>
<td>Financial leverage</td>
<td>-2.43</td>
<td>-3.23</td>
<td>0.79</td>
</tr>
<tr>
<td>Sale growth</td>
<td>0.25</td>
<td>0.19</td>
<td>0.05</td>
</tr>
</tbody>
</table>

H₀: difference in coefficient is not systematic

χ² = 8.93
Prob>χ² = 0.0302<0.05

Table 5 presents results for fixed effects regression model for this study. The summary statistics show that overall contribution of independent variables to the change in dividend payout is only 8%. Therefore, other firm specific, industry specific and macroeconomic factors exert a considerable impact on dividend payout ratio.

Table 5
Fixed Effects Regression

<table>
<thead>
<tr>
<th>Cash dividend</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-stat</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate tax</td>
<td>0.063</td>
<td>0.42</td>
<td>0.15</td>
<td>0.880</td>
</tr>
<tr>
<td>Financial leverage</td>
<td>-2.43</td>
<td>1.73</td>
<td>-1.41</td>
<td>0.163</td>
</tr>
<tr>
<td>Sale growth</td>
<td>0.25</td>
<td>0.42</td>
<td>0.59</td>
<td>0.556</td>
</tr>
<tr>
<td>Constants</td>
<td>82.98</td>
<td>18.07</td>
<td>4.59</td>
<td>0.000</td>
</tr>
</tbody>
</table>

R²: Within = 0.0234, Between = 0.2132, Overall = 0.0795 and Adjusted R² = 0.0751

Number of observations= 120, Number of groups= 10
Panel variable: strongly balanced
F-test, prob> F = 0.4665
The results further reveal that corporate tax rate has a positive but slight impact on dividend policy of oil and gas sector companies in Pakistan, where keeping the effect of other variables constant, 1% increase in the tax rate of industry will only increase the dividends paid by 0.063 units. Thus, first hypothesis of this research ($H_1$) is partially accepted. This result is in line with the researches of (Amidu and Abor, 2006; Masulis & Trueman, 1998; Gill et al., 2010). Similarly, regression coefficient of financial leverage shows that by increasing the amount of debt by 1% or decreasing the amount of equity by 1% in a firm’s capital structure, dividend payouts will be reduced by 2.43 units insignificantly. This result partially proves the second hypothesis of this study ($H_2$). This result is supported by the studies of (Al-Kuwari, 2009; Al-Malkawi, 2007; Rafique, 2012; Osegbue et al., 2014).

In addition, coefficient for sales growth represents an insignificant positive impact of percentage sales growth and the dividend pay-out ratio of Oil & Gas sector companies in Pakistan. This result also partially proves third hypothesis for this research ($H_3$). Researches by (Rozeff, 1982; Mohd et al., 1995; Al-Kuwari, 2009) support this result. Consequently, following regression equation is derived through fixed effect regression analysis:

\[ \text{Cash Dividend Pay-out Ratio} = 82.9 + 0.063 \times \text{(Corporate Tax Rate)} - 2.43 \times \text{(Financial Leverage)} + 0.25 \times \text{(Percentage Sales Growth)} + \text{Error Term} \] \hspace{1cm} (2)

**Conclusion**

The main purpose of this research was to test the impact of corporate tax, financial leverage and sales growth on the dividend payout ratio of oil and gas sector companies in Pakistan. Therefore, correlation and fixed effects regression technique have been employed to confirm the impact. Fixed effects regression method was verified by applying Hausman specification test. The correlation coefficients show a weak negative correlation of cash dividend with tax rate and debt to equity ratio, whereas, with growth opportunities it has a weak
positive correlation. However, there existed no issue of multicollinearity in data. Moreover, all three hypotheses have been assessed through $R^2$. The results of empirical analysis give an insignificant positive affect of corporate tax and sales growth on cash dividend. Contrarily, it provides an insignificant negative effect of financial leverage on the dividend pay-out ratio of Oil and Gas sector companies in Pakistan. On the whole, H1, H2 and H3 have not been accepted.

These results are consistent to the previous researches of local and international authors, corporate tax (Amidu and Abor, 2006; Masulis & Trueman, 1998; Gill et al., 2010), financial leverage (Oseghue et al., 2014; Al Kuwari, 2009; Al-Malkawi, 2007; Rafique, 2012), and growth opportunities (Rozeff, 1982; Mohd et al., 1995, and Al-Kuwari, 2009). In conclusion, the variables; corporate tax, financial leverage and sales growth do not contribute significantly to the dividend pay-out ratio of Oil & Gas sector companies in Pakistan. Thus, to predict the increase or decrease in dividend pay-out ratio of this sector, the shareholders should consider other variables such as profitability, internal factors, expenses, company size etc. Furthermore, from investment point of view, credit rating, expected future growth of company or industry should also be worked upon.

**Limitations**

Future research may cast doubt on the validity of any hypothesis or conclusion from a study because of its limitations. The limitations of this research influence the end result and conclusions that can be drawn. First, this study only incorporated companies which paid cash dividends and others were not considered due to their different pay-out policies. Second, balanced panel data for only twelve years (2002-2013) has been considered for analysis.

**Direction for Future Research**

For future research, this study can be broadened to longer time periods i.e. researchers can consider more number of years for research in Pakistan, extension of research to multiple industries can be made, different countries can be considered for comparison, and more statistical techniques can be utilized. Also other variables like productivity should be included in study, as it can have effect on industry returns, industry growth, resource utilization that can be attractive and profitable for shareholders in this firm.
References


